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MORGAGNI AND AUENBRUGGER IN THE RETROSPECT OF TWO HUNDRED YEARS

SAUL JARCHO

In 1761 the Remondinian press of Venice issued the two magnificent folio volumes of Morgagni's *De sedibus et causis morborum per anatomen indagatis*. In the same year the printing establishment of Trattner in Vienna published, in 95 octavo pages, Auenbrugger's slender *Inventum novum ex percussione thoracis humani ut signo abstrusos interni pectoris morbos detegendi*. The lapse of two full centuries gives us the occasion to reexamine these works and to reconsider the men who composed them.

In 1761 Morgagni was seventy-nine years of age. He had held the doctorate for sixty years. These six decades had been filled with teaching, research, clinical consultation, and writing, activities which had gained him renown as the leading anatomist of Europe. He was honored by membership in the principal learned societies of England and the Continent. His fame had spread beyond medical circles, and various parts of his work became known to Samuel Johnson,[1, 2] and later to Goethe[3] and to Coleridge.[4]

[1] J. Boswell: *The Life of Samuel Johnson* (1791). London: Oxford University Press, 1922, vol. 1, p. 371.

[2] F. Brady, and F. A. Pottle, eds.: *Boswell In Seach of a Wife, 1766-1769*. New York: McGraw-Hill, 1956, p. 154.

[3] *Goethes Werke herausgegeben im Auftrage der Grossherzogin Sophie von Sachsen*. Weimar: Böhlau, 1888-1912, Abtheilung 1, Band 34 (2), p. 188.

[4] Earl F. Griggs, ed.: *Collected Letters of Samuel Taylor Coleridge*. Oxford: Clarendon Press, 1956-1959, vol. 4, pp. 612-614. In the letter cited, Coleridge also makes some curious comments on Gall, Spurzheim, and on Matthew Baillie's *Morbid Anatomy*.

Auenbrugger's name was not widely resonant in the learned world. In 1761 he was only thirty-nine years of age. For ten years he had held a position on the staff of the Spanish Hospital in Vienna. During most of this decade he had worked on percussion of the chest. For reasons that are not entirely clear, his modest academic career soon aborted, and he devoted his later life to clinical practice, to family activities, and to music. In subsequent years he published three clinical essays and wrote the libretto for an opera by Antonio Salieri.[5] In 1784 he was honored by the Emperor Joseph II. Clearly he was a man of merit and standing, but until a few years before his death he was little known beyond the realm of Austria.[6]

It is evident that in 1761 the famous Morgagni could launch his opus majestically on the seas of learning, while Auenbrugger's thin bark could scarcely make a ripple.[7] This distinct contrast is purely external and implies no unkind or unwise comparisons of the intellectual or historical magnitude of the two contributions which we must now attempt to analyze.

The *De sedibus* is a fundamental approach to the problem of disease. As his title-page states, Morgagni was attempting to ascertain *where* the various diseases are located and *what* their causes are. To this statement two modifications must be appended. First, much of Morgagni's work had to do with the estimation of symptoms; the present day distinction between symptoms and diseases was still in process of development. Second, in his search for causes Morgagni was looking for the proximate and not the ultimate. He conceded that the latter might prove to be beyond the scope of human inquiry. These two qualifications are minor and in no way alter the fact that Morgagni was investigating almost the whole range of human disease. His work was oriented according to a definite and clearly envisioned principle, which kept his massive enterprise from becoming vague, diffuse, and distracted.

[5] *Der Rauchfangkehrer. Vienna*, 1781, and Berlin, 1783. Text and anonymous libretto in Library of Congress. Microfilm of libretto in N. Y. Academy of Medicine. Title-page of libretto reproduced in S. Jarcho: "Observations on the history of physical diagnosis: Hippocrates, Auenbrugger, Laennec." *J. Internat. Coll. Surgeons*, 1959, *31*: 717-725. Information as to authorship will be found in M. Neuburger: "Leopold Auenbrugger und sein Inventum novum," p. 6, in facsimile edition of *Leopold Auenbrugger's Inventum novum*. Vienna and Leipzig: Safar, 1922.

[6] For an obscure English notice see S. Jarcho: "A review of Auenbrugger's *Inventum novum* attributed to Oliver Goldsmith." *Bull. Hist. Med.*, 1959, *33*: 470-474.

[7] *The Index Catalogue of the Library of the Surgeon General's Office, U. S. Army*, lists a reprinting of the *Inventum novum*, edited by F. X. A. von Wasserberg under the unflattering title *Fasciculos . . . operum minorum medicorum et dissertationum*, Vienna, 1775.

The morbid conditions which he studied were arranged systematically *a capite ad calcem*, an order which is traceable as far back as the Edwin Smith papyrus. Under each condition Morgagni presents the cases observed by his respected teacher Valsalva and then the cases recorded in his own notes. These are supplemented by copious citations from the literature. The cases taken from the notes of Valsalva and of Morgagni usually consist of a brief clinical history followed by the anatomical findings, which are followed in turn by extensive discussion. Observations recorded during the life of the patient, i. e. what we would nowadays call the physical examination and progress notes, were almost entirely limited to the external appearance, the character of the pulse and respiration, and any miscellaneous peculiarities of movement or attitude.

We are enabled to glimpse Morgagni's examination of the living patient in the following passage:

> Being immediately call'd, and very near at hand, I ran to him instantly: and found him just as I tell you: his senses at the same time were perfect; the colour of his face, respiration, and the heat of his body, were natural; his pulse, in like manner, was full and strong; and he complain'd of no pain or disorder in his head, but seem'd to himself to be sleepy. Attending to this, and still more to what I related above, I sent one person to call a priest, and another to call a surgeon. . . .[8]

It is evident that in the matter of bedside examination medicine had hardly changed from the technique recommended by Hippocrates.[9]

Despite limitations of clinical method the major emphasis was directed to the correlation of anatomical findings with antecedent clinical events. In his attempts to reconstruct the course of these events, Morgagni was aided, as Dr. Paul Klemperer[10] has pointed out, by an improved physiology, which accounts in part for the superiority of the *De sedibus* over earlier collections. Other components of that superiority are the great extent of Morgagni's first-hand experience in anatomy, the encyclopedic scope of his reading, the systematic character of his work, and—not least in importance—the indices.

[8] *De sedibus* III. 11 (Alexander's translation, vol. 1, p. 44, see footnote 10). It would be unfair to rely very heavily on this brief passage for conclusions as to Morgagni's clinical methods. Unfortunately the clinical consultations (Giambattista Morgagni: *Consulti medici*, edited by E. Benassi, Bologna, 1935) refer mainly to cases in which Morgagni's opinion was requested by correspondents and in which he had not seen the patients. See also S. Jarcho: "Giovanni Battista Morgagni." *Bull. Hist. Med.*, 1948, *22*: 503-524.

[9] Prognostic II. Loeb Library edition, vol. 2, pp. 9-11.

[10] J. B. Morgagni: *The Seats and Causes of Diseases*. . . . Transl. by B. Alexander; preface by Paul Klemperer. New York: Hafner, 1960, vol. 1, p. v.

The indices of the *De sedibus* deserve more than passing mention. Morgagni called attention to them in his preface,[11] and they were an important cog and by-product in the machinery of clinico-anatomical correlation. I think we can trace a line of historical connection between the Morgagnian correlation exemplified in these indices and the recent use of calculating machines as adjuvants to medical diagnosis.[12] It will be remembered that punch-card devices are descendants of the Hollerith tabulator. This in turn is descended from the perforated-card mechanism used in the weaving machine of Morgagni's late contemporary Joseph Marie Jacquard (1752-1834).[13]

Leopold Auenbrugger, in contrast with Morgagni, attempted no fundamental or encyclopedic survey of disease and left no extensive body of writings. The entire *Inventum novum* consists of fourteen Observations, arranged in forty-eight Sections, plus Scholia. The essay purports to be merely a record of observations, unaccompanied by speculation. Indeed, in his brief prefatory note, Auenbrugger stated:

> In making public my discoveries respecting this matter, I have been actuated neither by an itch for writing, nor a fondness for speculation, but by the desire of submitting to my brethren the fruits of some seven years' observation and reflection.[14]

Although Auenbrugger provided no discursive comments which might ease the labor of the medical historian, it is clear that his purpose was to elicit *during the life of the patient* information concerning the condition of the internal organs and the location of lesions. Essentially therefore he was attempting a kind of correlation which did not differ greatly from that undertaken by Morgagni. As the late Dr. W. G. MacCallum stated in his *Text-Book of Pathology,*[15] " pathology and clinical medicine are, after all, the same thing viewed from slightly different angles."

The idea that useful information could be obtained by signs elicited during the lifetime of the patient encountered resistance, misunderstand-

[11] See the Author's Preface to the *De sedibus*, paragr. 16-18 (Alexander's transl. edited by Klemperer, *op. cit.* footnote 10, vol. 1, pp. xxix-xxxi).

[12] M. Lipkin, *et al,*: " Digital computer as aid to differential diagnosis." *Arch. Int. Med.*, 1961, *108*: 56-72.

[13] The Jacquard punch-card system represents the culmination of work done by Bouchon (1725), Falcon (1728), and Vaucanson (1745).

[14] John Forbes, transl.: *On Percussion of the Chest, Being a Translation of Auenbrugger's Original Treatise. . . .* Baltimore: Johns Hopkins Press, 1936, p. 7.

[15] W. G. MacCallum: *A Text-Book of Pathology*, 6th ed., Philadelphia: Saunders, 1936, p. v.

ing, and half a century of oblivion. It is unnecessary to describe here the nexus leading from Auenbrugger to Stoll to Corvisart to Laennec and the eventual incorporation of percussion into standard medical practice.[16, 17, 18] It is likewise irrelevant to our purpose to recount the progress of the "anatomical idea" from Morgagni to Bichat to Virchow. Instead, let us turn to the present era and consider some contemporary trends in pathology and clinical diagnosis, with special reference to the United States.

We have travelled a long road since 1761, when Auenbrugger performed the autopsies of his own ward patients, and Morgagni included in his general treatise special sections on diseases of the eye and the ear. Pathology is now a well-defined specialty, canonized by an American Board, which was established in 1936 and which now lists some 3500 diplomates in the continental United States. These statistics demonstrate the practical realization and growth of the "anatomical idea" which can be traced forward from Morgagni's time to our own and backward from Morgagni to Benivieni and beyond.

For the impressive growth of pathology we can discern many causes, including: the increase in the number and utilization of hospitals; improvement in their administration; improvement in medical education; advances in surgery; and the increased vigilance of supervisory bodies such as the American College of Surgeons.

In the large group of persons formally recognized as pathologists an incomplete division is discernible, resulting from differences in affiliation and interests. The academic pathologists, who devote all or nearly all their time to the service of a university and a university hospital, have tended to withdraw somewhat from the pathologists who have no major university connection but derive their income from hospital work and private consultation. In recent years the latter activity has proved lucrative and has tended to attract men away from the penury and prestige of the colleges. Operating in the opposite direction is the force of government

[16] K. Clar: *Leopold Auenbrugger*. Graz: Leuschner u. Lubensky, 1867, pp. 28-30. S. Jarcho: *op. cit.* footnote 5. E. Lesky: "Leopold Auenbrugger—Schüler van Swietens." *Deutche med. Wchnschr.*, 1959, *84*: 1017-1022.

[17] Percussion and auscultation were mentioned in lectures given at Jefferson Medical College, Philadelphia, as early as 1827. S. Jarcho: "John Eberle's lectures on medicine (1827)." *Am. J. Cardiol.*, 1961, *8*: 508-512.

[18] In 1836 the Boylston Prize Dissertations of the Massachusetts Medical Society dealt with the theme "How far are the external means of exploring the condition of the internal organs to be considered useful and important in medical practice?" Essays on this subject were written by Oliver Wendell Holmes, Robert W. Haxall, and L. V. Bell.

research funds,[19] which have enabled the colleges to improve their programs of research and instruction and thereby provide increasing numbers of opportunities for progressive workers. In a special category are the pathologists employed by governmental agencies, civilian and military, who have done important work in research and teaching but have often failed to receive the acclaim which they deserve.

With the steady development of the science of pathology, shifts in attitude and changes in scope have been inevitable. Most striking has been the opinion that the autopsy has declined in usefulness—an opinion controverted vehemently in letters to editors of medical journals.[20-25] A concomitant is the opinion occasionally voiced in staff rooms that Morgagni and Virchow represent nothing but anatomical pathology, and that this branch of knowledge is becoming obsolete. The persistence of such erroneous beliefs is clear proof of the need for expansion in the teaching of the history of medicine.

If it is true that classical morbid anatomy has declined in popularity—and this is suggested by the opinions just cited—a number of causative factors must be considered. These include: the death or retirement of pathologists who were trained in the large European institutes and who had the huge autopsy experience which these establishments provided; the advent of teachers of pathology whose anatomical experience is meagre; the delegation of autopsies to inexperienced juniors; and the increased prestige of experimental science.

The present stage in the evolution of pathology is best revealed in its altered scope. From cellular pathology we have advanced to the electron microscopy of minute cellular components, normal and abnormal. At the annual meeting of the American Association of Pathologists and Bacteriologists, held in April 1961, Dr. W. Bernhard stated that "it will be useful to describe carefully the fine structure of each human tumor, in

[19] According to information kindly supplied by the Pathology Study Section, Division of Research Grants, National Institutes of Health, the Pathology Study Section commenced to function in 1946. Up to the present time this group has considered 2848 applications for research grants and has approxed 2146; these figures do not include small grants or training grants.

[20] I. Starr: "Potential values of the autopsy." *J.A.M.A.*, 1956, *160*: 1144-1145.

[21] C. G. Burn: In "Correspondence," *J.A.M.A.*, 1956, *161*: 175.

[22] P. Klemperer: *Ibid.*, pp. 175-176.

[23] P. Karsner: *Ibid.*, p. 176.

[24] M. G. Bohrod: *Ibid.*, pp. 176-177.

[25] A. Angrist: "Effective use of autopsy in medical education." *J.A.M.A.*, 1956, *161*: 303-309.

order to build up a new pathological anatomy of tumors at the electron miscroscope level." This represents the ultimate extension of the morphological work of Morgagni, Bichat, and Virchow.

In addition to these purely morphological advances, pathology has incorporated a whole new world of experimentation, both physiological and chemical, and the study of chemistry has reached into the interior of the cell. Contemporary pathology and contemporary physiology strengthen one another, precisely as in the days of Morgagni and Virchow. Advances have been made also in radiobiology, in genetics, and in forensic pathology—a branch in which the European contributions have usually outrun the American. Of late there are even a few faint indications of renewed progress in paleopathology. The Morgagnian heritage still lives, in new and varied incarnations.

The heritage of Auenbrugger has had an equally interesting fate. There can be little question that in contemporary America physical diagnosis—*sensu stricto*—is in decline. The arts of percussion and auscultation are practiced universally but are used with greater interest and greater virtuosity by old doctors than by young, and physical signs are less and less often the focus of heated discussion at staff meetings. At the most recent annual session of the American College of Chest Physicians, held in June 1961, two papers were presented which support the contention that physical diagnosis is in decline. These papers were titled: "Renaissance of auscultation and phonocardiography as diagnostic tests" [26] and "Auscultation: A neglected art." [27] Dr. Howard B. Burchell of the Mayo Clinic has made the following statement: "It may be noted that percussion is eliminated from our bedside methodology—it may be entertaining, but as a practical way of getting anywhere diagnostically it is just as outmoded ('obsolete') as a 1904 automobile. . . ." [28]

If it is true that physical diagnosis is presently in feeble plight, we cannot avoid speculating as to the reason.

Whatever the historian or the romantic antiquarian may think, the methods of Auenbrugger and Laennec are crude eighteenth and nineteenth century inventions which cannot stand the competition of roentgenology and the still newer diagnostic techniques of the recent past. Unfortunately the modernists tend to throw out the baby with the detergent, and the real usefulness of the older methods tends to be lost through desuetude.

It is probable that the following facts and conditions have favored the

[26] By Dr. W. Proctor Harvey. [27] By Dr. J. Scott Butterworth.
[28] Howard B. Burchell: "Bedside cardiac diagnosis." *Postgrad. Med.*, 1960, *28*: 1-11.

obsolescence of percussion and auscultation: (1) the American, whether physician or patient, is fond of doing things by means of machinery; (2) we are a hurried people, and physical examination takes time; (3) the modern hospital and home are too noisy for optimum use of the stethoscope; (4) tuberculosis, a disease prolific of physical signs, is becoming rarer; (5) the phthisiologists—many of whom had had tuberculosis—were among our most skilled practitioners of physical diagnosis, and these men seem to be becoming less numerous; (6) an increasingly prominent figure is the modern cardiologist, often a member of a team of superspecialists, equipped with transducers, oscilloscopes, and oximeters, but no longer deeply interested in auscultation. Unlike the old-time tuberculosis specialist, the modern cardiologist usually has *not* had the diseases in which he is most interested.

All of these factors may have been effective in causing the present decline in physical diagnosis. If, however, the newer diagnostic techniques are viewed as methods for ascertaining the state of the viscera during the lifetime of the patient, it becomes apparent that the correlation initiated by Auenbrugger two hundred years ago, like the correlation symbolized by Morgagni, is still alive and active.

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HIPPOCRATIC PHARMACOLOGY

JERRY STANNARD

Traces of ancient Greek pharmacology still linger on in the present day: the bland diet during a fever, a purgative such as castor oil, a soothing ointment flavored perhaps with aqua rosae—all testify to practices elaborated over two millennia ago. It is no argument to say that current medical practice seldom resorts to these measures, for they are encountered as often in the idle conversations of the sophisticated as they are still current in the more remote of our rural areas. Thus, although official medical practice and the larger social structure have drastically changed in the interval, the presence of these older practices is evidence of a tradition which still exerts considerable influence. Such a tradition does not, usually, remain viable unless it possesses some value. It is the early stage of this tradition of Western European pharmacology—its development, its values, and its contributions, that are to be discussed in the following pages.

The beginnings of Greek pharmacology were probably so unpretentious that we can be certain of very little save the names of a few simples, generally of botanical origin, and how they were employed. One example must suffice. In the eleventh book of the Iliad, Homer recounts how the Trojans wounded Odysseus. Perceiving this, Machaon, the reputed son of Asclepius, is quickly taken to the tents of the Greeks in order to be on hand when Odysseus returns. Homer relates the value of Machaon in these words:

> For a leech is of the worth of many other men for the cutting out of arrows and the spreading of soothing simples.[1]

Later in the same book, a wounded soldier addresses Patroclus:

> But me do thou succour, and lead me to my black ship, and cut the arrow from my thigh, and wash the black blood from it with warm water and sprinkle thereon kindly simples of healing power. . . . Then Patroclus made him lie at length and with a knife cut from his thigh the sharp-piercing arrow, and from the wound washed the black blood with warm water, and upon it cast a bitter root, when he had rubbed it between his hands, a root that slayeth pain, which stayed all his pangs; and the wound waxed dry, and the blood ceased.[2]

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[1] Homer, *The Iliad* XI 514-515. Trans. A. T. Murray (Loeb Library), London, 1954, vol. I, p. 518.

[2] Homer, *op. cit.* XI 828-831, 844-848. Trans. Murray, vol. I, pp. 540-542.

The question of whether there was a Near-Eastern basis of Greek pharmacology is a controversial one.[3] It is not easy to find an alternative solution to the question of the origin of Greek pharmacology. A probable answer, however, is the belief that there was a crudely empirical basis for the aforementioned passage, typical of many of the early references.[4] This empirical basis was, in turn, probably the distillate of archaic or folk medicine practiced for many centuries.[5] Folk medicine such as this probably depended more on local drug lore than on any extensive or systematic borrowing from the then culturally more advanced Eastern nations. It is, of course, impossible to prove this hypothesis because folk medicine by its very nature is never committed to writing at the time it is *en vogue*. Traces of folk medicine occur in Greek writings of all periods: e. g., Thucydides (II 47), Plato (Symp. 201 D), and others testify to the belief than an epidemic could be averted by prayers and the consultation of oracles.[6]

Despite these and other references to folk medicine, a system cannot be reconstructed from them. There was no explicitly formulated system of medicine, including pharmacology, until the Hippocratic writings were composed, though again indications of pre-Hippocratic medical theories are well-known.[7] It is thus with Hippocrates that a study of Greek pharmacology must begin. Incidentally, the term "Hippocrates" here means the anonymous author of any one of the writings comprising the Hippocratic Corpus. We know very little of the historical Hippocrates; even the ancient tradition that he was born ca. 460 B. C. on the island of Cos is not above suspicion.[8]

Today, pharmacology is divided into three disciplines: pharmacognosy, pharmacodynamics, and pharmacotherapy. The ancient writers on drug lore clearly did not possess the refined techniques practiced today in the clinic and in the laboratory. Consequently, it is difficult to avoid projecting our practices and vocabulary on the ancient writings in the belief that we

[3] The attribution of Greek pharmacological practices to Egyptian sources, despite its many defenders, requires much further study. For an attempt to account for the origin of Greek pharmacological practices without recourse to Near Eastern sources, cf. Georg Sticker, "Entwickelungsgeschichte der spezifischen Therapie." *Janus*, 1929, *33*: 131-190.

[4] P. Saintyves, "L'Art de Guérir est-il d'origine empirique?" *Janus*, 1917, *22*: 372-390.

[5] Owsei Temkin, "Beiträge zur archaischen Medizin." *Kyklos*, 1930, *3*: 90-135.

[6] Hugo Magnus, "Die Volksmedizin, ihre geschichtliche Entwickelung und ihre Beziehungen zur Kultur." *Abhandlungen z. Gesch. d. Med.*, 1905, *15*: 1-112.

[7] Charles Daremberg, *État de la médecine entre Homère et Hippocrate*. Paris: Didier, 1869.

[8] Ludwig Edelstein, "The genuine works of Hippocrates." *Bull. Hist. Med.*, 1939, *7*: 236-248.

are thereby explaining them. Nevertheless, the triple division of pharmacology offers a convenient method of pulling together a wide array of material bearing on Hippocratic pharmacology.

I. Pharmacognosy

A study of Hippocratic pharmacognosy is largely confined to an examination and identification of those simples which were employed for therapeutic purposes. The first class to be examined is that derived from the vegetable kingdom, that is, the botanicals of older medical terminology. Botanicals supplied by far the largest number of drugs for the ancient materia medica and they retained this position up to the middle of the last century. The preeminent position accorded plants is due to several factors among which may be mentioned their common occurrence, widespread distribution, ease of identification, and the relative simplicity with which they may be prepared.

In order to reduce to manageable size a discussion of botanicals, the following procedure has been adopted. After some remarks on the identification of the plants occurring in the Hippocratic writings, several of them will be examined under the following headings: 1. Mode of administration. 2. The specific purpose for which the drug was prescribed. 3. The Hippocratic explanation of, or rationale for, its specific action. 4. A comparison of the ancient explanation with that found in the modern literature on pharmacognosy.

If there is any thesis to be maintained in this paper, it is simply that a comparative study of the type indicated in the last point is very important for the evaluation of ancient pharmacology. But clearly, if the findings of modern pharmacognosy are to be utilized, it is necessary that the identification of the plant be established with as much certainty as possible. It is because it aids in the identification of ancient plant names, that it is necessary to include under pharmacognosy a few remarks on the Hippocratic explanation of a drug's specific action. Hence, we must first ask the question: What are the means by which plants may be identified? Of the more than 200 plant names which occur in Hippocrates, the great majority are capable of at least a generic identification and many can also be given a specific identification with a fair degree of certainty.[9]

The first step in the identification of an ancient plant is to search for some clue provided in its description. Frequently, a few well-chosen

[9] J. H. Dierbach, *Die Arzneimittel des Hippokrates*. Heidelberg: Gross, 1824. Though old, this work has not yet been superseded.

descriptive epithets are more valuable for purposes of identification than are all the imprecise and conflicting references taken together. Our most important source for the description of plants is the " History of Plants," written by Theophrastus, the disciple and slightly younger contemporary of Aristotle. The nine books which constitute this work have justly earned for him the title, " the first systematic botanist." For our purposes, the importance of Theophrastus consists in the precise descriptions of plants which he studied at first hand. These descriptions, which have enabled historians of botany to identify most of the plants mentioned by him, are doubly important for the student of Hippocratic botany. For Theophrastus, writing within a century of the death of Hippocrates, often uses the same plant names as those in Hippocrates. Moreover, the flora described by Theophrastus—mainland Greece, the islands of the Archipelago, and the coast of Asia Minor, is, ecologically speaking, identical to the flora known to Hippocrates.[10] If a Hippocratic plant name also occurs in Theophrastus, there is a good likelihood that it is the same plant that is in question. A good example is the plant called *teutlon* by Theophrastus. This plant is usually accepted to be the wild beet (*Beta maritima* L.). The same term occurs in Hippocrates.[11] From the analysis given of this plant in Hippocrates, plus its therapeutic uses, it seems safe to conclude that it is the same plant as Theophrastus' *teutlon*.

The second criterion for the identification of ancient drug plants is that supplied by modern phytogeography. For instance, having provisionally identified a plant in terms of descriptive evidence, we then ask: Has this plant ever been recorded as occurring in Greece, the islands, or the coast of Asia Minor?[12] This procedure must be used with caution, however, for although the absence of any record is presumptive evidence that the plant did not occur there in antiquity, the converse is not true. The fact that a plant now occurs in Greece, etc., does not necessarily mean it is indigenous. For plants are frequently introduced for commercial reasons, seeds are carried by birds, and finally some plants are able to flourish, after escaping from cultivation, in a state indistinguishable from their originally indigenous habitat.

[10] Martin Rikli, *Das Pflanzenkleid der Mittelmeerländer*. 3 vols. Bern: Huber, 1943-1948.

[11] Hippocrates, *On Regimen*, 54 (VI 560 Littré). Unless otherwise specified, all references to Hippocrates are to the edition of Emile Littré, *Oeuvres complètes d'Hippocrate*. 10 vols. Paris: Baillière, 1839-1861.

[12] The definitive work on Greek phytogeography is E. von Halácsy, *Conspectus florae graecae*. 4 vols. Leipzig: Engelmann, 1901-1912.

A third criterion is supplied by iconography or the pictorial representation of plants, trees, and their fruit. Pliny, in the first century A. D., refers to a herbal with colored illustrations which is, unfortunately, no longer extant.[13] Our earliest illustrated herbal dates from the year 512, when a manuscript of Dioscorides was presented as a wedding present to Juliana Anicia, daughter of the Emperor of the West. But much older than the representations supplied by herbals are those found on Greek coins and vases. Among the plants found on ancient coins are myrtle, barley, quince, grapes, storax, and several different species of conifers.[14] Honeysuckle and lotus are among the most common floral decorations on Greek vases,[15] while on the walls of the palace of Cnossus on Crete, ivy, crocus, and lilies can still be discerned.[16]

A fourth criterion, that supplied by philology, is of especial value when used in conjunction with phytogeography. Since it is common, even in our times, for the same plant to have different local names, the correlation of local name and scientific identification is important.[17] In some cases, local names are recognizable variants of ancient plant names which have disappeared and form an essential link with the past. The investigation of the etymology of Greek plant names is an entire field in itself, and its results are important corroborative evidence for the correct identification of a plant.[18] Thus *triphyllon,* literally three-leafed, is generally accepted to be *Psoralea bituminosa* L. and closely related to our alfalfa.[19]

Finally, mention should be made of later glossaries or dictionaries. This is a common literary genre, especially between the sixth and fourteenth centuries. Frequently an entry in a glossary will shed light on the identity of an ancient plant name by defining it in terms of later or more common plant names.[20] Elsewhere, in an article to be published shortly,

[13] Pliny, *Naturalis historia* XXV 4, 8.

[14] F. Imhoof-Blumer und Otto Keller, *Tier- und Pflanzenbilder auf Münzen und Gemmen des klassischen Altertums.* Leipzig: Teubner, 1889, pp. 54-63 and Tafeln IX-X.

[15] Cf. R. M. Cook, *Greek Painted Pottery.* London: Methuen, 1960, p. 118.

[16] Charles Seltman, *Approach to Greek Art.* New York: Dutton, 1960, p. 17 and Plate 11a.

[17] For the correlation of classical Greek plant names and their Byzantine synonyms, cf. Bernhard Langkavel, *Botanik der spätern Griechen vom dritten bis dreizehnten Jahrhunderte.* Berlin: Berggold, 1866.

[18] A. Carnoy, *Dictionnaire étymologique des noms grecs de plantes.* Louvain: Publications universitaires, 1959.

[19] *Triphyllon* is mentioned in *Diseases* III 16 (VII 150 L.) as one of the ingredients in an expectorant eclegma. On its identity, cf. Carnoy, *op. cit.,* p. 270 and C. Fraas, *Synopsis plantarum florae classicae.* München: Fleischmann, 1845, p. 62.

[20] For Byzantine botanical glossaries, cf. A. Delatte, *Anecdota atheniensia et alia.* Liége: Vaillant-Carmanne, vol. II, 1939, pp. 273-454.

I have confirmed, with the aid of Byzantine and Arabic botanical glossaries, the identity of a Hippocratic plant name as our common garlic.[20a]

The last criterion is what may be called comparative pharmacognosy. By comparing the physiological action of chemically-recognized ingredients obtained from an accurately identified plant with the ancient descriptions of a plant and its therapeutic uses, a provisional identification may be corroborated. Thus, Moïssidés, in studying the plants employed as abortifacients, noted many cases where a rationale can be given for their use in antiquity.[21] Other classes of drugs, including diuretics, emetics, and expectorants have been studied by von Grot and others.[22] Mention must be made, finally, of two plants used as "psychopharmaca."[23] The root of mandragora (*Atropa Belladonna* L.) was recommended as a drink for "sick persons who, in their sadness, wish to hang themselves,"[24] while poppy (*Papaver somniferum* L.) was used several times for relief of pain.[25] Comparative pharmacognosy also plays a valuable role by demonstrating that many botanical drugs were probably ineffective. An example is provided by the juice of common lettuce or its wild form. This milky-sap, well known to all gardeners, was believed to have been an anodyne by Hippocrates.[26] Despite the extraction of a bitter crystallizable substance, lactucin, tests have failed to indicate any sedative properties of *Lactuca scariola* L. or *L. sativa* L.[27]

With these as the means for identifying Hippocratic medical plants, we can resume our discussion by considering some examples of botanical drugs and the uses for which they were intended. As the following examples will indicate, the particular action of plant drugs was recognized

[20a] Cf. my paper, forthcoming in *Osiris*, entitled "The plant called Moly."

[21] M. Moïssidés, "Contribution à l'étude de l'avortement dans l'antiquité grecque." *Janus*, 1922, *26*: 59-85, 129-145.

[22] Rudolf von Grot, Über die in der hippokratischen Schriftensammlung enthaltenen pharmakologischen Kenntnisse," in Rudolf Kobert, ed., *Historische Stud. a. d. pharmakol. Inst. d. k. Univ. Dorpat*, 1889, *1*: 58-133; T. Beck, "Haben die Hippokratiker das Secale cornutum therapeutisch verwendet?" *Arch. f. Gesch. d. Med.*, 1908, *2*: 279-284; H. Fischer, "Helleborus im Altertum und bei Paracelsus." *Schweiz. med. Wchnschr.*, 1936, *66*: 484-489.

[23] Anne E. Caldwell, *Psychopharmaca*. Washington: U. S. Dept. of Health etc., 1958. Psychopharmaca are defined on p. 1 as "drugs that primarily affect the mental state."

[24] *Places in Man* 39 (VI 238 L.).

[25] *Fistula* 7 (VI 456 L.); *Diseases of Women* 206 (VIII 400 L.).

[26] *Diseases of Women* 78 (VIII 196 L.); *ibid.* 101 (VIII 224 L.).

[27] F. A. Flückiger and D. Hanbury, *Pharmacographia*. London: Macmillan, 1874, p. 357.

in antiquity, though, of course, the ancients had inadequate explanations for their use.

In Hippocrates and all Greek medical writers after him, the juice of a plant called *skammōnia* is prescribed as a drastic purge.[28] This plant has been identified as *Convolvulus Scammonia* L., a member of the morning glory family and closely related to the common bindweed as well as to jalap. Older chemical analysis indicated that there is no essential difference between the active ingredients of scammony and Mexican jalap (*Ipomoea orizabensis* Led.).[29] The active principle, jalapin, is a glucosidal resin. It is owing to this substance that scammony, which last appeared in U. S. P. IX, is classified as a hydragogue cathartic.

Common flax (*Linum usitatissimum* L.) occurs frequently in Hippocratic writings under the name *linon* from which our word "linen" is derived. It is used internally as a drink for "uterine suffocation"[30] and as a detersive or emollient clyster for uterine disorders,[31] and externally in the form of cataplasms.[32] Modern uses center around its laxative, demulcent, and emollient action. It is perhaps odd that there is no evidence of its being used as a laxative in Hippocrates, but later, in the time of Dioscorides, its laxative properties are explicitly mentioned.[33] The Hippocratic use, especially as cataplasms, is borne out by analysis of the emollient effect of linseed oil. The oil is also used in an ointment, and Hippocrates recommends it to soften the uterine orifice in the belief that it will correct sterility.[34] Although this use was probably ineffective, it clearly points to a recognition of linseed oil as a lubricant.

Another drug of common occurrence in Hippocratic pharmacology was *sikuos agrios* or the squirting cucumber (*Ecballium Elaterium* Rich.) which yielded the juice called *elaterion*. This juice is known to contain elaterin, a crystallizable substance which possesses a powerful action as a hydragogue cathartic.[35] The purgative property of *elaterion* was known to Hippocrates, who employed it also as an oxytocic and abortifacient.[36]

[28] *Diseases of Women* 16 (VIII 54 L.).
[29] Flückiger and Hanbury, *op. cit.*, p. 396.
[30] *Diseases of Women* 129 (VIII 276 L.).
[31] *Ibid.* 64 (VIII 132 L.); *ibid.* 78 (VIII 190 L.).
[32] *Ibid.* 198 (VIII 382 L.).
[33] Dioscorides II 103, ed. Max Wellmann, *Pedanii Dioscuridis Anazarbei De materia medica libri quinque*. Berlin: Weidmann, vol. I, 1907, p. 177.
[34] *Superfetation* 32 (VIII 500 L.).
[35] H. W. Youngken, *Textbook of Pharmacognosy*. 6th ed., Philadelphia: Blakiston, 1948, p. 861.
[36] Oxytocic: *Superfetation* 4 (VIII 478 L.); abortifacient: *Diseases of Women* 91 (VIII 220 L.).

Although there appears to be no chemical action which would justify this usage, it is well known that a drastic purge may be sufficient to perform the specific action desiderated by Hippocrates.

Finally, mention should be made of another instance where modern pharmacognosy supplies a rationale for the Hippocratic usage. Today, common dill (*Anethum graveolens* L.) is recognized in the form of aqua anethi as a carminative. Among the many uses of dill or *anethon,* in Hippocrates, including a mouth wash in which dill was probably used as a flavoring agent,[37] it is explicitly mentioned as effective for " relaxing the stomach," which is, after all, the *raison d'être* of a carminative.[38]

Many other instances could be given of the Hippocratic use of botanicals which we know today to be justified, e. g., the use of the rind of the pomegranate (*Punica Granatum* L.) as an astringent.[39] The high tannin content of the rind is evidence that, as an astringent, it was probably quite effective.[40]

The next class of simples to be examined is that derived from the animal kingdom. While there is some reason to suppose that the ancient therapeutic use of many botanicals can be justified in modern terms and that they offered some relief, the case is different as regards drugs of animal origin.[41]

At least ten animal phyla can be identified as the source of these drugs: mammals, birds, fish, arthropods, including insects and crustacea, and molluscs are the most common, though amphibia, reptiles, coelenterates, echinoderms and porifera are also represented. For example, in Chapter 48 of " *On Regimen,*" 17 fish, 10 mollusca, 5 crustacea, 1 echinoderm (a sea urchin), and 1 coelenterate (a sea anemone) are listed as having specific medicinal properties. Since marine animals are rather less adaptable than plants to a changing environment, the marine fauna of modern Greece probably differs little from that of Hippocrates' time.[42] But while zoologists are in general agreement as to the identification of the vast majority of these organisms, specific therapeutic data are lacking, because

[37] *Diseases of Women* 185 (VIII 366 L.),

[38] *Affections* 43 (VI 252 L.).

[39] *Ibid.* 54 (VI 264 L.) ; *Diseases of Women* 110 (VIII 238 L.).

[40] Youngken, *op. cit.,* p. 591 estimates the tannin content to be 22-28 percent.

[41] For the ineffectiveness of drugs of animal origin, cf. W. B. McDaniel, " The medical and magical significance in ancient medicine of things connected with reproduction and its organs." *J. Hist. Med. & Allied Sc.,* 1948, *3*: 525-546.

[42] E. g., cf. D'Arcy W. Thompson, *A Glossary of Greek Fishes.* London: Oxford Univ. Press, 1947, passim.

most of these animals have long since been dropped from the pharmacopoeias.

Various portions of these animals were employed for a wide range of complaints but with little evidence that they were superior to botanicals or, indeed, that they were more effective than no treatment at all. Such substances included flesh, blood, skin, eggs, horn, etc.[43] One may speculate as to the effectiveness of such remedies as cuttle fish eggs, administered as an emmenagogue suppository or the use of deer horn, powdered or calcined, for sterility.[44] An explanation, however, can probably be given for the use of the lung of a sheep when inserted in the nostrils for repair of a fracture.[45] Likewise, the effectiveness of goose-grease and seal-oil as lubricants or as the vehicle for ointments and suppositories can be recognized.[46] Goat's liver, eaten raw for metrorrhagia is an instance where, in the absence of any but the simplest data of enzymology and physiological bio-chemistry, silence seems judicious.[47]

Closely connected with the foregoing is a class of substances of animal origin used particularly in mixtures of various simples. This class includes butter, wax, marrow, whey, rennet, etc. Butter, for instance, is used frequently in the preparation of suppositories but is also recommended to be drunk as a galactagogue.[48] Marrow, likewise, was used in suppositories and also as an ointment for local skin eruptions.[49]

No discussion of animal substances would be complete without mention of two drugs which retained their place in pharmacopoeias until recent times. I refer to the cantharis, variously known as blister beetle or Spanish Fly, and castoreum.

Cantharis vesicatoria L., a small beetle, is the source of cantharidin, a crystalline anhydrid of cantharidic acid. Official in U. S. P. XI, it was used principally as a vesicant. In Hippocratic writings it was considered

[43] A full account of drugs of animal origin and their uses will be found in Max Höfler, *Die volksmedizinische Organotherapie und ihr Verhältnis zum Kultopfer.* Stuttgart: Union deutsche Verlagsgesellschaft, [1908].

[44] Cuttlefish eggs; *Diseases of Women* 84 (VIII 208 L.); deer horn: *Sterility* 13 (VIII 434 L.).

[45] *Joints* 38 (IV 168 L.). The passage continues by noting that it is superior to sponge in that it does not absorb fluids which would cause it to expand.

[46] *Diseases of Women* 203 (VIII 390 L.); 90 (VIII 218 L.).

[47] *Ibid.* 110 (VIII 236 L.).

[48] On suppositories: *Diseases of Women* 78 (VIII 180 L.); galactagogue: *ibid.* 44 (VIII 102 L.).

[49] Emollient suppositories: *Diseases of Women* 205 (VIII 394 L.); *Superfetation* 33 (VIII 500 L.); an ointment for genital *aphthai: Diseases of Women* 34 (VIII 82 L.).

especially valuable for dropsy and as an emmenagogue suppository.[50] Castoreum has now disappeared completely from medical practice. But this substance, obtained from the preputial follicles of the European beaver, was once thought to be a powerful anti-spasmodic. This belief, now rejected, apparently owes its origin to the Hippocratic writings in which castoreum was supposed to have a special affinity for the uterus—and hence, to be useful in uterine complications generally.[51]

Before we turn to the third class of simples—drugs of mineral origin—it is well to note a further, rather heterogeneous class of substances whose full importance will emerge later in this paper. In the language of the pharmacist, these substances would be termed either correctives or excipients rather than the basis or adjuvant. This class, comprising both botanical and animal-derived drugs, can perhaps be sub-divided into three sub-classes. There are, first of all, substances which appear as items of food in the normal diet, e. g. alphita (barley groats), olive oil, honey, wine, etc. Medicinally, the substances of this group are used mainly to ensure the proper consistency of a drug or to overcome some undesirable property of the basis. Thus, we find that honey is used in the preparation of emollient ointments, e. g., following cauterization of haemorrhoids,[52] and and as a corrective it is used to sweeten the bitter flavor of water of lentils drunk as an emetic.[53] A second group includes substances whose major uses are cosmetic as much as pharmacological, e. g., *muron*—a sweet smelling oil used in unguents or in perfumes.[54] A third group is exemplified by gum and resin. Resins of various types are used, e. g., in compresses for compound fractures.[55] Whether there was a disinfectant or bacteriostatic property imparted to the dressing may be doubted because of the other ingredients including wine and beet leaves.[56] Gums, like myrrh

[50] For dropsy: *Diseases of Women* 59 (VIII 118 L.); emmenagogue suppository: *ibid.* 84 (VIII 208 L.).

[51] Ointment to soften uterine orifice: *Superfetation* 32 (VIII 500 L.); in suppository for sterility: *Sterility* 9 (VIII 428 L.); drunk with wine after succussion: *Excision of the Foetus* 4 (VIII 516 L.).

[52] *Haemorrhoids* 2 (VI 438 L.).

[53] *Diseases of Women* 146 (VIII 322 L.).

[54] *Ibid.* 201 (VIII 384 L.).

[55] *Fractures* 29 (III 514 L.).

[56] The use of beet leaves, with and without wine, is mentioned several times, *Joints* 63 (IV 272 L.), *Affections* 38 (VI 248 L.), *Use of Liquids* 5 (VI 128 L.). F. B. Lund, "Hippocratic Surgery," *Ann. Surg.*, 1953, *102*: 537, suggested that the wine served as an antiseptic. On the other hand, as Garrison has pointed out, the aseptic technique of dry dressings is something quite different from antiseptic technique, F. H. Garrison, *An Introduction to the History of Medicine*. 3rd. ed., Philadelphia, London: Saunders, 1921,

(from *Balsamodendron myrrha* Nees), were frequently used in fumigations. References to both nasal and vaginal fumigations for uterine disorders leave some question, however, as to the effectiveness of the therapy as well as to Hippocratic anatomy.[57]

A last class of simples to be mentioned, and again as much botanical as animal-derived, includes the dung of various animals, both domesticated and wild. Thus, cow dung is used, chiefly as a fumigant, for "uterine suffocation," as an anodyne for uterine pain, and as an emmenagogue,[58] while more exotic excrement, like hawk dung, is drunk with wine as a cure for sterility.[59]

We come now to the third class of simples, those of mineral origin. The number of minerals is restricted owing, no doubt, to the technological inability to obtain water soluble salts and purified samples of those minerals which are usually found in combination with other insoluble or inert minerals. Nevertheless, some 11 chemical elements can be counted among the mineral drugs. Two elements, sodium and copper, account for a large share of the mineral drugs which also include aluminum, antimony, arsenic, iron, lead, mercury, sulphur, and probably calcium and potassium salts in smaller amounts. Sodium occurs in the form of common salt, NaCl or soda, Na_2CO_3. In the form of common salt, its uses are numerous, e. g., in a drink following a purge, if the patient is feverish.[60] It is tempting to explain this use in modern terms as an effort to reestablish the fluid level and to maintain a correct electrolyte balance. While I think such an interpretation is correct, it is quite certain that this was not the explanation given in antiquity. I mention this because it is a particularly good example of one of the chief difficulties in the history of pharmacology—the ease with which the fallacy of historical projection can be committed.[61] The vast difference between the ancient and modern explanation of the physiological action of mineral drugs will be seen by considering another use of salt, viz., that it dries the body. Whatever

pp. 90-91. On the possibility of volatile oils of herbs as antiseptics, cf. L. Laloy, "Die Antisepsis bei den Alten." *Janus*, 1900, *5*: 535.

[57] Nasal fumigation: *Diseases of Women* 137 (VIII 310 L.); vaginal fumigation: *Superfetation* 32 (VIII 500 L.).

[58] For "uterine suffocation": *Diseases of Women* 203 (VIII 388-390 L.); as an anodyne: *ibid.* 206 (VIII 400 L.); as an emmenagogue: *Places in Man* 47 (VI 346 L.).

[59] *Diseases of Women* 89 (VIII 214 L.).

[60] *Affections* 41 (VI 250 L.).

[61] In *Diseases* II 59 (VII 92 L.) where pleurisy *may* be in question, Hippocrates advises that air from an inflated bladder be injected into the chest cavity. Lund, commenting on this passage, states, "Here is the ancient germ of nitrogen injections in phthisis . . .," F. B. Lund, *op. cit.*, p. 536.

be the modern explanation of this, there is no doubt about the ancient explanation. As we shall see later, the ancient explanation is formulated in terms of the theory of the elements. The other common sodium salt was *νίτρον*—the *nitrum* of Latin writers, the *neter* of the Hebrews, and the nitre of the English translations of the Old Testament. The dispute, going back to the Renaissance, whether this meant soda or saltpetre (KNO_3), has just recently been put to rest by the detailed study of Partington, who has shown conclusively that *νίτρον* etc., always meant soda.[62] It was used internally, but more often externally in the form of cataplasms and wet dressings. The internal uses are, however, of more interest historically. Formerly, it was believed that the internal use of minerals was the direct result of the Paracelsian revolution of the sixteenth century. But, as a few examples may indicate, the internal use of minerals was already well established in the Hippocratic Corpus, and an equal frequency of occurrence can be found in succeeding generations of Greek medical writers. Thus, soda is drunk with honey for flatulence or used in clysters for ulcers or lesions.[63] Or consider the following recipe:

> Soda, 2 drachmas
> Castoreum or sagapenum (*Ferula persica* Willd.) 1 obol
> Asphalt, i. e., liquid natural petroleum, 1 drachma
> Drink in an oil-wine mixture to expel the afterbirth.[64]

Other minerals included alum, probably impure aluminum sulphate, and sandarach, disulphide of arsenic, both of which were used in ointments and in suppositories.[65] *Misy,* an impure antimony sulphide, was likewise used, and there is one recipe in which it is to be drunk with water as a contraceptive.[66] Copper salts are probably the most difficult to identify since copper enters into the composition of many common minerals in many different chemical forms. Copper salts in the form of an acetate were used in suppositories, while the oxide was used in plasters, and the carbonate was especially recommended as an ointment for fistula in ano.[67]

[62] J. R. Partington, *A History of Greek Fire and Gunpowder.* Cambridge: Heffer, 1960, pp. 298-339.

[63] For flatulence: *Diseases of Women* 177 (VIII 360 L.); uterine clyster: *ibid.* 78 (VIII 192 L.).

[64] *Ibid.* 78 (VIII 184 L.).

[65] Alum: *Fistula* 3 (VI 450 L.); *ibid.* 10 (VI 460 L.); Sandarach: *Superfetation* 32 (VIII 500 L.); *ibid.* 33 (VIII 504 L.).

[66] *Disease of Women* 76 (VIII 170 L.).

[67] Suppositories: *Haemorrhoids* 8 (VI 442 L.); *Sterility* 11 (VIII 432 L.); plasters: *Diseases of Women* 104 (VIII 226); fistula in ano: *Fistula* 3 (VI 448). On Hippocratic mineral drugs cf. J. Berendes, *Die Pharmacie bei den alten Culturvölkern.* Halle: Tausch & Grosse, 1891, pp. 196-204.

Lastly, we must mention water. Three types were usually distinguished, excluding aqueous solutions—ordinary water, sea water, and brine.[68] Naturally, they were used most importantly in drinks, especially in the form of decoctions of leaves.

The last remarks concern dosage. The entire problem of metrology and posology is so complex that little more can be done here than call attention to a few miscellaneous matters. It is of interest that the quantity of each of the several ingredients is often specified in the preparation of mixtures. One might conclude that, the required ingredients being available, it would be possible to duplicate the recipe. But that would be an unsafe inference. Since we have no knowledge of what the Hippocratic ingredients would assay, we could not duplicate a recipe volumetrically according to modern standards of exactness, despite our ability to duplicate it qualitatively. While there is probably a variation no wider than that permitted by modern standards between the botanicals of ancient time and the same plants found today, this is not true as regards mineral drugs or such excipients as vinegar or wine. Indeed, unless the wine came from the same jar, the possibility of even a rough assay is probably precluded.

Although our inability to duplicate a recipe volumetrically somewhat lessens the importance of exact decimal equivalents of the dosage of ancient drugs, we can in some cases transcribe them in modern notation: e. g., 1 obol = ⅙ drachma = 1.05 grams = ca. 15 grains. In other cases, however, we find recipes typified by the following, in which neither precise equivalents nor volumetric analysis seems possible:

> For a woman suffering during a difficult delivery
> She will drink:
> 4 dark seeds of peony
> 1 cheramys of a decoction of elder fruit (= .009 L.)
> castoreum as large as a bean.[69]

Beyond the difficulties of interpreting Hippocratic weights and measures, other references to dosage seem as straightforward as they are sensible: e. g., dosage *ad libitum* is frequently mentioned, while in one case the dosage is specified to be " in accordance with the severity of the complaint."[70]

[68] *Use of Liquids* 1 (VI 118 L.). Cf. also, *In the Surgery* 13 (III 316 L.) and Dierbach, *op. cit.*, pp. 1-5.

[69] *Diseases of Women* 136 (VIII 308 L.).

[70] *Ibid.* 175 (VIII 358 L.); *Sterility* 18 (VIII 440 L.); *Diseases of Women* 78 (VIII 184).

II. Pharmacodynamics

There are scattered throughout the Hippocratic writings theories and speculations that shed valuable light on the earliest period of Western pharmacodynamics. But because these passages are not systematically connected, a more probable beginning can be found by examining the relation between drugs and diet. It is well known that dietary and other forms of regimen bulked large in Hippocratic writings.[71] It is probably safe to assume that some of the distinctive features of Hippocratic pharmacology are derived, more or less directly, by observing the gains, unspectacular but certain, of a controlled regimen.[72]

Let us begin by briefly comparing two of the more famous Hippocratic writings from the standpoint of drug administration and diet. *Epidemics* I is so well known that there is no need to rehearse the evidence that it is one of the earliest examples of the now-familiar case-method. And here we meet a strange thing. Despite the writer's insistence that the patient's regimen must be regulated by considering his history,[73] in only one or two instances is there any mention of drugs, and even there the composition of the prescription is not specified. This case describes a woman suffering perhaps from puerperal fever. "She began," so runs the text, "by feeling pain in the stomach and the right hypochondrium. Pains in the genital organs. The discharge stopped. A suppository relieved these conditions."[74] With the exception of a second reference to this suppository some ten lines later, no other drugs are mentioned in the fourteen cases with which *Epidemics* I closes. One might conclude from this that the writer of the *Epidemics* was guilty of a callous, inhuman devotion to scientific accuracy; and in order to attain this goal, the patient's welfare was neglected. This is, I think, unlikely for the following reasons.

There is no simple, botanical or otherwise, which is effective against a highly infectious disease. Quite probably the Hippocratic writer, through

[71] It has recently been argued that for Hippocrates as well as for succeeding generations of Greek physicians, "scientific medicine was identical with dietetic medicine," Owsei Temkin, "Nutrition from classical antiquity to the baroque," in Iago Galdston, ed. *Human Nutrition, Historic and Scientific*. New York: International Univ. Press, 1960, p. 83. Cf. also Ludwig Edelstein," ΠΕΡΙ ΑΕΡΩΝ und die Sammlung der hippokratischen Schriften." *Problemata*, 1931, *4*: 100 sq.

[72] Cf. *Regimen in Acute Diseases* 9 (II 280 L.) and such empirical findings as, "In every disease it is a good sign when the patient's mind is sound and his appetite good; the contrary is a bad sign," *Aphorisms* II 33 (IV 480 L.). Cf. *ibid.* VII 66 (IV 598 L.).

[73] *Epidemics* I 3, 11 (II 676 L.). Cf. also *Nature of Man* 9 (VI 54 L.) and *Aphorisms* I 2 (IV 458 L.).

[74] *Epidemics* I 13, case 4 (II 690 L.).

numerous failures, knew this also. For this reason, the most effective measures he could take were palliative. He would try to keep the patient as comfortable as possible and await either the crisis that spelled recovery or the famous prognostic sign, the *facies hippocratica,* the face of death. There are suggestions in *Epidemics* I that the patient's comfort was a matter of concern to the physician; he was given water when thirsty, cooled when feverish, etc.[75] The old concept of "let nature take her course" was not a counsel of despair; it was rather the admission that there was no effective rational treatment available.[76]

Now if we turn to another writing and consider the treatise, *On Regimen,* we shall find something quite different. We may, in fact, be in a better position to understand the virtual absence of drugs from *Epidemics* I. *On Regimen* is concerned largely with two matters: a list of precepts designed to promote or maintain health and, secondly, a similar list of food stuffs classified, in terms of their useful properties, for a variety of different complaints.[77] The interesting feature for us is the analysis of foodstuffs. This analysis will provide a good example of early pharmacodynamics and also help to explain *Epidemics* I. Foodstuffs are classified in three ways: (i) in terms of their physiological action, e. g., diuretics or laxatives, (ii) in terms of their therapeutic properties, supposed or real, e. g., cholagogues, and (iii) in terms of their relative nutritive value. The question then arises how to distinguish foodstuffs from drugs for, as we have seen, the same items may appear as either. This is, indeed, a difficult problem, as we know from Galen's

[75] Case 7 of *Epidemics* I (II 700-702 L.) describes a feverish patient. On the second day, "after frequent drinking, he had a copious stool," and on the fifth day "his head was bathed." Case 2 (II 688 L.) states, "on the tenth day [the patient] received no drink." Elsewhere attendants are mentioned (II 692 L.) who presumably took care of such matters and perhaps supervised the diet. Ackerknecht summed up the point succinctly: "For better or worse Hippocrates observed sick people, not diseases." Erwin H. Ackerknecht, *A Short History of Medicine.* New York: Ronald Press, 1955, p. 112. For a detailed examination of the physician-patient relation, cf. Ludwig Edelstein, "The professional ethics of the Greek physician." *Bull. Hist. Med.,* 1956, *30*: 391-419 and H. N. Couch, "The Hippocratean patient and his physician." *Tr. Am. Philological A.,* 1934, *65*: 153 sq.

[76] The belief that the physician "assists nature by drugs" is contained in such aphorisms as, "Nature is the physician of diseases," *Epidemics* VI 5 (V 314 L.); "Nature (lit. natures) is untaught in all things," *On Nourishment* 39 (IX 112 L.). For an attempt to explain "natures" in terms of modern medical science, cf. August Bier, "Hippokratische Studien." *Quellen u. Stud. z. Gesch. d. Naturw. u. d. Med.,* 1932, *3*: 51-78.

[77] Cf. Adolf Palm, *Studien zur hippokratischen Schrift* Περὶ Διαίτης. Diss., Tübingen: Tübinger Chronik, 1933.

remarks on the subject.[78] The distinction between drugs and foodstuffs is, I believe, a purely pragmatic one: If an item is administered to a sick person with a curative aim, regardless of its mode of administration and the nature of the complaint, it is *ipso facto,* a drug. Thus, *cardamon,* probably our cress (*Lepidium sativum* L.), is said to be heating and to melt the flesh; however, since it congeals white phlegm, so as to produce strangury, its indiscriminate usage must be controlled and it is positively prohibited for phlegmatic persons.[79] Coriander (*Coriandrum sativum* L.), another common confectionery and flavoring agent, also possesses medicinal value. It is analyzed in the following manner: it is hot and astringent; it stops heartburn and when eaten last causes sleep.[80] Calaminth, perhaps our catnip (*Nepeta cataria* L.), warms and purges,[81] while blite (*Amaranthus blitum* L.) warms without passing well by stool.[82] Thus, by a combination of common sense and observation, based perhaps on his own dietary habits, the writer presents us with a theory of how botanical drugs work. But in virtue of the fact that these plants also form part of the normal diet, the viewpoint of the dietician is never wholly absent in Hippocratic discussions of simples. This comes out particularly well in another treatise, *On Ancient Medicine,* in which the inelegant but accurate word " slops " designates barley gruel, a basic item in the normal diet. Depending on the patient's condition as well as on certain theories to be mentioned presently, the gruel is either thickened, diluted with water, honey, or wine, or flavored by various herbs, e. g., dill or anise.[83] It is not surprising, then, to find few explicit references to drugs in *Epidemics* I. From the standpoint of that writer, botanicals are part of the ordinary dietary regimen which is, presumably, carefully regulated during any illness. The language and logic of the *Epidemics* suggest that attendants,[84] or the physician himself, supervised the diet. Thus the statement " They were not hungry, in fact, food was able to be given " [85] and such observations as " a complete lack of appetite " [86] and " They gladly took all sorts of food, after which their fever abated," [87] indicate, at the very least, that food was given during the course of the illness and perhaps it formed part of the treatment. On the other hand,

[78] Galen, *De alimentorum facultatibus* in *Galeni opera omnia,* ed. C. G. Kühn, Leipzig: Cnobloch, 1821-1830, VI, 468. For a discussion of this point, cf. Temkin, " Nutrition . . ." (cf. n. 71), p. 87.

[79] *On Regimen* 54 (VI 558 L.).

[80] *Ibid.* 54 (VI 558 L.).

[81] *Ibid.* 54 (VI 558 L.).

[82] *Ibid.* 54 (VI 560 L.).

[83] Anise flavored wine: *Diseases of Women* 34 (VIII 82 L.).

[84] Cf. note 75.

[85] II 610 L.

[86] II 628 L.

[87] II 632 L.

from the strongly taxonomic and analytic standpoint of the writer of *On Regimen,* these same items are considered as drugs and classified accordingly.

Before concluding this section on pharmacodynamics, three further points must be mentioned. The first concerns the role of experiment. In our sense of the term, experiments, with all the conceptual apparatus of prediction, hypothesis, controls, statistical evidence, and precise instrumentation, are of course wanting. But experiment, etymologically derived from the Greek *peiraomai,* "to attempt," need not be taken so strictly. There is little doubt that experiment in the sense of utilizing first-hand experience, as opposed to theorizing about how things ought to be, underlay many of the references to simples, e. g., the taste or odor of a certain plant.[88] Moreover, the Hippocratic writer must have been impressed by observing favorable or unfavorable results of his therapeutic practice. On the other hand, there are instances of experiments in the stricter sense of testing. In the treatise, *On the Heart,* it is asserted that some liquid, instead of passing into the stomach, passes into the trachea. As proof of this, some colored water is given to a thirsty pig. If its throat be cut immediately, the trachea will be found colored.[89] What is important here is the attempt at substantiating a claim by empirical *and experimentally-produced evidence.*

This brings up a second point whose mere mention is of considerable historical importance. There is, in the Hippocratic Corpus, no evidence of the practice of magic medicine. The absence of incantations and amulets is a sufficiently strong reminder of the darker days that were to follow.[90] Dreams, it is true, are mentioned as an aid to prognosis, but this is not, so far as I know, ever actually utilized in medical practice.[91] Bags of aromatic herbs are worn about the neck,[92] but again, this is

[88] The surprisingly large amount of botanical information scattered throughout the Hippocratic Corpus suggests that the botanical resources were known to the Hippocratic physician through practical experience. A study of this material is in preparation and will appear elsewhere.

[89] *On the Heart* 2 (IX 80 L.). There is an English translation of this short treatise. F. R. Hurlbutt, Jr., "Peri Kardies. A treatise on the heart from the Hippocratic corpus." *Bull. Hist. Med.,* 1939, *7*: 1104-1113. For a discussion of this and other related passages, cf. G. Senn, "Über Herkunft und Stil der Beschreibung von Experimenten im Corpus Hippocraticum." *Arch. f. Gesch. d. Med.,* 1929, *22*: 217-289, and W. A. Heidel, *Hippocratic Medicine.* New York: Columbia Univ. Press, 1941, p. 105.

[90] A. R. Mills, "Peasant remedies from the Greek islands." *Bull. Hist. Med.,* 1948, *22*: 441-450.

[91] *On Regimen,* Book IV (VI 640 sq.) is subtitled, "On Dreams." For the use of dreams in diagnosis, cf. *Humors* 4 (V 480 L.).

[92] *Fistula* 10 (VI 460 L.).

only ineffective not magical, especially so, when it is remembered that the beneficial action of the inhalation of the volatile oils of many herbs is a belief that persisted up through the seventeenth century.

The last item to be mentioned is the role of toxicology. There is little evidence that poisons, either natural or introduced by artifice, formed a very important part of Hippocratic pharmacodynamics. *Peganon,* or rue (*Ruta graveolens* L.) is stated to be a prophylactic against poisons, while in the Hippocratic *Oath,* the physician is enjoined from engaging in the administration of poisons.[93] It was only later, when poisoning became a widespread social threat that major importance was given to antidotes and the *Giftbuch.*

III. Pharmacotherapy

This final section raises some difficult questions concerning the interpretation of Hippocratic pharmacology. Two such problems are the Hippocratic concept of disease and the important role played by non-medical theories in the formulation of the disease concept.

There is a tradition going back to antiquity that the Coan, or Hippocratic school, so named for the island of Cos, disagreed wth the rival Cnidian school over a fundamental question. At issue allegedly was the relative weight to be attached to prognosis and to diagnosis. The Hippocratic school, we are told, came out strongly in favor of prognosis.[94] However this may be, much of Hippocratic pharmacotherapy is concerned with the treatment of symptoms. Because of the elaborate symptomatology, it is sometimes possible to identify a disease and thus to evaluate the particular therapy. A noticeable characteristic of Hippocratic writings is that a drug is usually prescribed for a definite complaint. Although purges, for example, are often recommended for specified complaints, these complaints are, more often than not, symtoms rather than identifiable clinical entities. Other complaints for which drug therapy is recommended include various types of discharges and gastrointestinal disturbances, often marked by biliousness, headache, fever, and chills. For the treatment of such symptoms there was, as indicated above, a full stock of drugs available. The extent of available drugs may

[93] Rue as a prophylaxis: *On Regimen* 54 (VI 558 L.). For the passage in the Hippocratic Oath on poisons, cf. Ludwig Edelstein, *The Hippocratic Oath. Supplements to Bull. Hist. Med.*, no. 1, Baltimore: The Johns Hopkins Press, 1943, pp. 6 sq.

[94] Theodor Meyer-Steineg, "Die Bedeutung der Prognose in den hippokratischen Schriften." *Arch. f. Gesch. d. Naturw. u. d. Technik,* 1913, *6*: 258-262. On the motives for, and social significance of, prognosis in the Hippocratic Corpus, cf. Edelstein, ΠΕΡΙ ΑΕΡΩΝ (cf. n. 71), pp. 60-88.

by measured by the fact that no less than 53 different simples are recommended as emmenagogues.

In discussion of the clinical background of Hippocratic pharmacotherapy, one must bear in mind that theory often determined the choice of therapy. We have observed above that an analysis of a drug included the specification of its properties, e. g., its tendency to warm and dry, or to evacuate bile, or its reputed effectiveness as a galactagogue or soporific. In order to more fully understand such claims, it is necessary to say a few words about the influence on Hippocratic medicine of two important theories. The theory of the humors and the associated theory of the four elements probably had their origin in pre-Socratic natural science of the fifth century.[95] We find, for example, traces of these theories in Empedocles, Alcmaeon, and other early writers. The best known version of the doctrine of the humors, the one which became classical, states that man is composed essentially of four vital humors or juices—blood, phlegm, yellow bile, and black bile. When the humors are in equilibrium, bodily health is maintained, while a disturbance, depending on its severity, causes a proportionately severe disturbance or disease. Moreover, and as a consequence of this general statement, each disease is characterized by the relative excess or depletion of one or more of the humors. Here, then, in crudely quantitative terms, is the foundation of Hippocratic physiology, pathology, and aetiology. In order to illustrate this, I shall cite the account of epilepsy found in the treatise *The Sacred Disease*. " The disease," the author states,

> attacks the phlegmatic but not the bilious or choleric. Its origin begins in the embryo while it is still in the womb, for like the other parts, the brain too is purged and has its impurities expelled before birth. In this purging, if the action be thorough and regulated, and if there flow away neither more nor less than is proper, the infant has a perfectly healthy head. But if the flux from all the brain be too abundant, and a great melting take place, he will have as he grows a diseased head, and one full of noise. . . .[96]

Here we have the aetiology of a disease stated in terms of a theory which, if accepted, necessarily determines the therapy. The object of therapy will be to re-establish the equilibrium of the humors. It will now be possible to see more clearly why the writer of *On Regimen* was so careful to specify the properties of foods and drugs.

[95] Charles Kahn, *Anaximander and the Origins of Greek Cosmology*. New York: Columbia Univ. Press, 1960, pp. 119-165.

[96] *The Sacred Disease* 8, in *Hippocrates*. Trans. W. H. S. Jones (Loeb Library), London, 1952, vol. II, pp. 155-157.

The famous medical precept of *contraria contrariis curantur,* " opposites are cured by opposites," has its origin here.[97] The rational grounds of drug therapy are found within the framework supplied by the twin theories of the humors and the four elements. Since phlegm, for instance, is thought to partake equally of the cold and moist, a phlegmatic person is characterized by the predominance of cold and moist humors in his body. Any drug that promised to restore the warm-cold balance of the body was thereby indicated: e. g., *thymos* (*Thymbra capitata* L.) evacuates phlegm because it heats and dries.[98]

Another crucial matter pertains to the old belief, going back to Plato, that Hippocratic medicine is concerned with the " whole man." [99] An extension of the relation between regimen and drug therapy can now be mentioned. Regimen covered much more than diet in the modern sense. It included precepts designed to regulate man's relation to his environment, not only with respect to diet, but also with respect to exercise and rest, clothing, shelter, a favorable location for one's dwelling, sexual activity, and the like.[100] If a sick person is to be treated effectively, he must be viewed as a part of a larger context. The writer of the short work, *Regimen in Health,* summed up the thought nicely, " It is necessary to establish regimen with regard to age, season, habit, land, and physique, and to counteract the prevailing heat or cold." [101] It is as important in the prognosis and treatment to regulate exercise and rest as it is to institute a supervised diet. The case-method is thereby justified in the attempt to tabulate all of the data relevant to the prognosis. This information concerning the individual determines the choice of therapy fully as much as the theories mentioned above and probably more than the ready availability of specific drugs. Thus, a person suffering from an overabundance of bile is, according to the theories current in Hippocratic writings, hot and dry. Therapy may be the administration of a cho-

[97] This doctrine is stated in various ways in the Hippocratic writings, e. g. *Nature of Man* 9 (VI 52 L.); *On Regimen* 40 (VI 538 L.).

[98] *On Regimen* 54 (VI 560 L.). For the identification of *thymos,* cf. Alfred C. Andrews, " Thyme as a condiment in the Graeco-Roman era." *Osiris,* 1958, *13*: 150-156.

[99] The relevant passage in Plato (*Phaedrus* 270 C) reads, " Do you think it possible to obtain knowledge of the nature of the soul without knowing the nature of the whole? " Whether this means " whole of man " or " the whole (sc. universe)" cf. Ludwig Edelstein, " The role of Eryximachus in Plato's Symposium." *Tr. Am. Philological A.,* 1945, *76*: 97 sq., F. Steckerl, " Plato, Hippocrates and the Menon Papyrus." *Classical Philology,* 1945, *40*: 166-180, and my paper, " Socratic eros and Platonic dialectic." *Phronesis,* 1959, *4*: 120-134.

[100] Cf. e. g., *On Regimen,* chapters 57-66 (VI 570-588 L.).

[101] *Regimen in Health* 2 (VI 76 L.).

lagogue, e. g., beet juice or marjoram.[102] On the other hand, any drug is indicated which increases the cold and moist elements in the body and, so to speak, neutralizes the hot and dry. Barley juice is a good example, for it is explicitly stated to be cold and moist.[103] But, equally important, the patient must forego heating and drying foods; furthermore, he must avoid any environmental factors or any activity which would promote the specific therapy is justified at three different levels: (i) establishment of the proper balance of humors; (ii) establishment of the proper relation of the four elements—the hot, dry, cold, and moist; (iii) the availability of specific drugs.

Several miscellaneous topics must round out this discussion of Hippocratic pharmacotherapy. It has been mentioned above that it is difficult to identify the diseases whose symptoms are described and treated. There are relatively few instances where a disease can be identified with some certainty, e. g., mumps in *Epidemics* I 1, epilepsy in the *Sacred Disease,* and a few other conditions such as apoplexy and Pott's Disease have been recognized. It is not intended here to catalogue the diseases nor even to offer tentative identifications.[105] It is more germane to our interests to note what sort of diseases and disorders were treated by the Hippocratic physician. For this purpose it would be invaluable to possess statistics on the incidence of diseases complete with all the tabulated data of our Public Health surveys—age, sex, racial and geographical indices, etc. Barring this, we must be content with generalities. From the pharmacotherapeutic standpoint, the most important group of diseases were probably gastro-intestinal, followed closely by upper-respiratory complaints. It must not be forgotten that malaria was endemic in ancient Greece.[106] It is, therefore, probable that a latent or chronic malarial infection colored the clinical manifestations of many disorders. The frequent references to enlarged or painful spleen and the periodical chills and fevers are ample evidence.[107] Other common complaints for which drugs were prescribed included localized lesions and infections, a wide variety of dermatological conditions, and a host of gynaecological dis-

[102] Beet juice: *Diseases of Women* 109 (VIII 232 L.); marjoram: *On Regimen* 54 (VI 560 L.).

[103] *On Regimen* 40 (VI 536 L.).

further increase of his already hot and dry constitution.[104] Thus, the

[104] For a general statement, cf. *Regimen in Health* 1 (VI 72-74 L.).

[105] E. W. Goodall, "On infectious diseases and epidemiology in the Hippocratic collection." *Proc. Roy. Soc. Med.*, Hist. Sect., 1934, *27*: 524-534.

[106] W. H. S. Jones, *Malaria and Greek History*. Manchester: Univ. Press, 1909.

[107] References to swollen spleen are frequent: *Airs, Waters, Places* 7 (II 26-28 L.); *Affections* 20 (VI 228 L.); *Humors* 8 (V 488 L.); *Aphorisms* III 22 (IV 496 L.).

orders whose differential diagnosis is a matter of dispute.[108] The Greek term *phthisis,* current even in the nineteenth century as a synonym for consumption, undoubtedly included pulmonary tuberculosis.[109] However, since the presence of the tubercle bacillus clearly cannot be demonstrated, a positive diagnosis in the technical sense is hardly possible.[110] Infectious diseases, probably including diphtheria and mumps, yielded to no therapy save palliative.[111] At the other extreme, there are few references to battle wounds, bites of reptiles or insects, and remarkably few eye complaints. Although fractures are treated in a series of very capable treatises, they are of more interest to the history of orthopedic surgery than to pharmacology.

Anyone familiar with more than half a dozen of the Hippocratic treatises must recognize profound differences in content and in style, sometimes reaching the point where contradictory assertions can be adduced with equal authority. Multiple authorship is proven beyond question. Moreover, it is likely that different audiences were intended by the various Hippocratic writings.[112] Some of the books appear to be written for the professional physician, others for the layman, and perhaps a third group ought to be added comprising midwives, leeches, medical assistants, and apprentices. In those books with complicated recipes and equally complicated preparation and administration, a professional physician is likely to be the intended reader. He, or his assistant, is probably expected to collect the simples and prepare them as stipulated. On the other hand, in those works in which the therapy is largely dietary or "regiminal" a lay person may be the intended reader. This cannot, of course, be proven, but it does offer a partial explanation of the otherwise surprisingly wide range of pharmacotherapeutic methods and substances.

With mention of the wide range of durgs available, we have come full circle in our discussion of Hippocratic pharmacology and the place of drugs in Hippocratic medicine. Western medicine got off to an auspicious start with such a rational application of drugs and their administration.

[108] Cf. H. Fasbender, *Entwickelungslehre, Geburtshülfe und Gynäkologie in den hippokratischen Schriften.* Stuttgart: Enke, 1897.

[109] Cf. Hans Moritz, "Die Behandlung der Lungentuberkulose im Altertum." *Ztschr. f. Tuberk,* 1934, *69*: 28-38, 100-113, and A. S. Pease, "Some remarks on the diagnosis and treatment of tuberculosis in antiquity." *Isis,* 1940, *31*: 380-393.

[110] Zambaco, as late as 1912, concluded that "nos constatations démontrent mathématiquement" the presence of tuberculosis, etc. in antiquity. D. Zambaco, "L'antiquité de la léprose, de la syphilose et de la tuberculose." *Arch. f. Dermat. u. Syph.,* 1912, *111*: 193-211.

[111] Diphtheria is described in *Dentition* 20 (VIII 546 L.). Cf. H. Haeser, *Lehrbuch der Geschichte der Medicin.* 3. Aufl., Jena: Dufft, vol. III, 1882, pp. 428-429.

[112] On this matter, cf. Owsei Temkin, "Greek medicine as science and craft." *Isis,* 1953, *44*: 213-225.

JOHN SNOW—THE AUTUMN LOITERER

P. E. BROWN

> And men have grown old among their books
> To die case-hardened in their ignorance,
> While autumn loiterers . . . have chanced on truth
> *Browning.*

John Snow's book on the mode of communication of cholera has attracted a good deal of attention in recent years and has come to be regarded as the prototype of much modern epidemiological research. One aspect of the work which has so far escaped notice and is not unrelated to this question is his attitude to the microbic and fungus theories.

"The writer," he says, "does not wish to be misunderstood as making this comparison (with intestinal worms) so closely as to imply that cholera depends on veritable animals or even animalcules, but rather to appeal to that general tendency to the continuity of molecular changes, by which combustion, putrefaction, fermentation and the various processes in organised beings are kept up." [1]

This neutral outlook enabled him to escape the fate which overtook his rivals, Budd, Swayne, and Brittan, when their fungus theory was discredited. It indicates also the frame of mind in which he approached his problem. So when we examine Snow's connection with the fungus theory we can begin to understand the processes of his discovery and the direction taken by his later research.

Snow and the Fungus Theory.

John Snow's theory that cholera was communicated through drinking water was first published on August 29th, 1849. His idea was that a contagious principle attacked the intestinal mucosa without passing into the blood-stream. Such an agent could only enter the body by being swallowed and leave it in the vomit or stools—the chain of infection being completed by the faecal contamination of food and water. Some form of poison which could "multiply itself by a kind of growth, changing surrounding materials to its own nature" [2] was clearly essential to this theory, since the disease was able to spread without limit from one or

[1] J. Snow: *On the Mode of Communication of Cholera.* London: Churchill, 1849, p. 9.

[2] J. Snow: "On the pathology and mode of communication of cholera." *London M. Gaz.*, n. s. 9: 745.

two affected individuals. As it happened, a fungus which appeared to have just these properties was already under investigation at the time when Snow put forward his views.

In the second week of July, 1849, a few weeks before Snow's publication, Brittan and Swayne, at a meeting of the Bristol Medico-Chirurgical Society, demonstrated "peculiar microscopic objects in the characteristic rice-water discharges of persons affected with malignant cholera." [3] These objects were believed to be living organisms of the nature of yeasts. Shortly afterwards William Budd detected the same objects in the drinking-water of cholera districts in Bristol. His conclusions, published on September 27th, were:

1. That the cause of malignant cholera is a living organism of distinct species.
2. That this organism . . . is taken by the act of swallowing into the intestinal canal, and there becomes infinitely multiplied by the self-propagation which is characteristic of living beings.
3. That the presence and propagation of these organisms in the intestinal canal, and the action they there exert, are the cause of the peculiar flux which is characteristic of malignant cholera; and which, taken with its consequences, immediate and remote, constitute the disease.
4. That these organisms are developed only in the human intestine.
5. That these organisms are disseminated through society (1) in the air, in the form of impalpable particles; (2) in contact with articles of food; and (3) and principally, in the drinking water of infected places.[4]

Snow reacted at once to this announcement. On October 4th, in a lecture to the Western Literary Institution, he "made allusion to the recent discoveries of Messrs. Swayne, Brittan, and Budd, without, however, laying absolute stress on the circumstance that the fungi recently discovered were really the *fons et origo mali*." [5] There was obviously a great deal in common between the two theories, and on October 13th Snow and Swayne jointly addressed the Westminster Medical Society. Snow was again guarded in his remarks, and though he thought that the recent discovery of peculiar microscopic cells tended to confirm his view of the nature of cholera he was not sure that they were the real cause.[6]

This was as far as he ever went in accepting the fungus theory, and he took no further part in its subsequent development and collapse. The situation on November 2nd was described by the *London Medical Gazette*:[7]

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[3] W. Budd: *Malignant Cholera, Its Mode of Propagation and Its Prevention.* London: Churchill, 1849, p. 5.

[4] *Ibid.*

[5] *Lancet*, 1849, *2*: 413.

[6] *Ibid.*, pp. 431-433.

[7] *London M. Gaz.*, 1849, n. s. *9*: 759.

Minute fungi or organisms as they are called, have been discovered by the aid of powerful microscopes in the excretions etc. of cholera patients, and in their intestines after death. The excretions and bodies of persons dead of other malignant diseases, after careful and minute enquiry, have, it is said, failed to disclose similar organisms or any traces of them. The original discoverers of the fungi have stopped here: they contented themselves with merely recording what they observed; but the subject was instantly taken up in the public journals and a theory founded upon it, which has gone the round of the daily and Sunday newspapers. It ran thus:— The fungi or organisms are peculiar to cholera; *ergo* they are the cause of the disease; *ergo* their immediate destruction is a sure preventive against the spread of the malady, and that object is effected in the easiest manner possible, by simply throwing the excretions in which they are found, when expelled from the body, into a chemical solution!

This mode of dealing with medical researches, i. e. of adopting hasty conclusions and giving them spurious newspaper currency is derogatory to the true character of science.

The end of the theory was already on its way. On October 29th James Paget wrote in a letter "I believe, however, the whole hypothesis will be shortly exploded; for it appears certain that many of the things seen are not fungi, but remnants of food taken." [8] This, indeed, was the substance of the report published in early November by Drs. Baly and Gull, for the Sub-committee of the College of Physicians on the Cholera Fungi. They concluded: "the whole theory of the disease which has recently been propounded, is erroneous, as far as it is based on the existence of the bodies in question." [9]

Snow had only narrowly escaped involvement in a failure which might well have put an end to his research. And yet his reasons for refusing to accept the theory are not apparent at first sight. If he sensed its defects he never called attention to them. And he rejected its sound parts also, since he at no time recommended the chemical treatment of cholera evacuations, although his own hypothesis seemed to demand it. The explanation for his attitude must be looked for outside the realm of his scientific judgment.

The Claim to Priority

Snow's earliest views on the nature of contagion were derived from Liebig, whose influence he acknowledged on a number of occasions. The concept of molecular changes had the stamp of this great scientific authority, and it was natural that Snow should prefer it to vague and

[8] S. Paget: *Memoirs and Letters of Sir James Paget.* 3rd ed. London: Longmans Green and Co., 1903, p. 169.

[9] *Lancet*, 1849, *2*: 493.

popular notions on animalcules and fungi. The choice to begin with was of no particular significance. But after Budd's announcement, Snow was faced with a more serious conflict over the renunciation of the fungus theory. The problem declares itself in his remarks to the Western Literary Institution and the Westminster Medical Society. He had to have the publicity which the new theory gave to his views, but he was not prepared to forego his sole right to the discovery, which he was in danger of losing by throwing in his lot with Budd and his colleagues. The weakness of his position is brought out by this footnote in Budd's paper: [10]

> Dr. Snow, whose ingenious pamphlet on cholera fell into my hands while these materials were preparing for publication, has been led, by the consideration of particular instances of some of the facts above alluded to, to the same conclusion as to the part which water plays in the diffusion of the disease. Of being the first to develop and to publish this very important conclusion he must, therefore, have the whole merit. To no part of this merit do I lay the slightest claim. In Dr. Snow's illustration of the entire subject of the propagation and prevention of cholera there is, besides, much that is so apt and in such entire accordance with the truth, that the detection of the actual cause of the disease, and the determination of its nature were all that was wanting to convert his views into a real discovery.

The artfulness of this manoeuvre is quite apparent. Budd conceded the claim to priority of publication without admitting that his conclusions owed anything to Snow. He implied that Snow was welcome to the merit of being the first to make the discovery, if he thought it mattered, but for his part he would rather be judged on the intrinsic superiority of his own theory. Snow's response was not to defend his discovery, by explaining the processes which had led him to make it, but to take further steps to establish its priority. On October 13th he told the Westminster Medical Society that " since he (Dr. Snow) first published his views on this point, Dr. William Budd had found the microscopic bodies before alluded to in such drinking-water of cholera districts as received the contents of sewers." [11] In November, 1849, when giving his reasons for believing that cholera was a local affection of the alimentary canal, he added " an opinion which I thought almost peculiar to myself when I was first led to adopt it, but which, as I have since been informed, others were beginning to entertain." [12]

These remarks, and a number of other instances in which Snow revealed

[10] Budd, *op. cit.*, p. 19.
[11] *Lancet*, 1849, *2*: 432.
[12] Snow: " On the pathology and mode of communication of cholera," *loc. cit.*, p. 745.

his preoccupation with the whole question of prior publication,[13] make it reasonable to assume that the claim to priority was one of the chief factors in his rejection of the fungus theory and the ideas connected with it. Bound up with this assumption there are two new problems. The first is to discover why he preferred not to defend his theory on rational grounds, and the second is to study the effect on his later research of a decision to ignore "the detection of the actual cause of the disease, and the determination of its nature."

Pathological Considerations

Quite clearly the theory of cholera which Snow was called upon to defend was, in the first place, a pathological theory, since he said himself "it was from considerations of its pathology that the mode of communication was first explained." [14] What at once awakens our curiosity is the obscurity in which he envelops its origins and the shift of ground from one account of it to another. In his first pamphlet he wrote:

> It is generally assumed that the blood becomes so altered by the choleric poison, that its watery and saline parts begin to exude by the mucous membrane of the alimentary canal; but it is more consonant with experience, both therapeutical and pathological, to attribute the exudation to some local irritant of the mucous membrane, no instance suggesting itself to the writer in which poison in the blood causes irritation of and exudation from a single surface as in cholera.[15]

This is the analogy between cholera and the irritant poisons which occurs in Christison's *Treatise on Poisons,*[16] a well-known work, and which does not seem to lead by itself to the conclusion that cholera is waterborne, since irritant poisons are rare in drinking water. Snow gave a more useful clue in his paper of November 1849,[17] when he said that it was because cholera began with a premonitory diarrhoea and because the general symptoms could all be explained by loss of fluid into the bowels, that he came to believe that cholera was a local disease. The essential part of the argument came from the observation that the disease could be cured in the early stages by the ordinary remedies for diarrhoea:

"Now this circumstance," he said, "is a strong reason for concluding

[13] See remarks on Dupuytren, *Lancet,* 1847, *1*: 461.
[14] Snow: *On the Mode of Communication of Cholera.* 2nd ed., London: Churchill, 1855, p. 16.
[15] Snow: *On the Mode of Communication of Cholera,* 1849, p. 8.
[16] R. Christison: *Treatise on Poisons.* 3rd ed., Edinburgh: Black, 1835, p. 112.
[17] Snow: "On the pathology and mode of communication of cholera," *loc. cit.,* p. 745.

that the mischief in cholera is at first confined to the mucous membrane; for it is not easy to conceive that chalk, and opium, and catechu could neutralize or suspend the action of a poison in the blood." [18]

Once he had the idea of a poison which was neutralised in the intestine and could not enter the blood-stream, the conclusion that it was water-borne followed almost automatically. The poison must gain access to the mucosa by being swallowed and leave it in the evacuations, whose disposal had excited a good deal of public interest throughout 1848. R. D. Thomson and William Farr had expressed their concern over the discovery of urine in the wells of Glasgow.[19] A review of a book by C. F. Ellerman had condemned as unhealthy and wasteful the plan " which consigns the excreta of the population to rivers or water-courses." [20] In the summer of the same year R. A. Smith informed the British Association that " all wells near houses and all wells in towns contain nitrates which may be easily traced to sewers and accumulations and outlets of refuse." [21]

The actual date on which he first arrived at his conclusions on the mode of communication of cholera was in the latter part of 1848, as Snow himself said.[22] Now, the first time he joined in any of the Westminster Medical Society's many discussions on cholera was on October 21st 1848. At that meeting Dr. Peregrine mentioned the drainage of serum from the system as the cause of the general symptoms and recommended compound chalk powder. Dr. Skiers stressed the need to arrest the first symptoms of diarrhoea if suppression of urine was to be avoided. Snow, whose mind was evidently not then on the central problem, called attention to the resemblance between cholera and ether asphyxia.[23] However, all the elements of his theory were already in the air, and one is tempted to think of his brilliant and original concept as a kind of intellectual doodle which he sketched out on that day while his more informed colleagues were expounding their views in his presence. Certainly he behaved as if this were so and never acknowledged the voluminous literature in which many of his supposedly novel ideas had been repeatedly discussed, and he never attempted to answer the criticisms directed at the pathological parts of his argument.

[18] *Ibid.*
[19] *Lancet*, 1848, *2*: 223.
[20] *Ibid.*, 1848, *1*: 261.
[21] R. A. Smith: "On the air and water of towns." *Rep. Brit. A. Adv. Sc.*, 1848, p. 30.
[22] Snow: *On the Mode of Communication of Cholera*, 1855, p. 125.
[23] *Lancet*, 1848, *2*: 507.

The Period of Epidemiological Proof

The rejection of the fungus theory had saved Snow's reputation and left him as the undisputed author of the new concept of cholera. But it had deprived him of another method of proving his hypothesis—the method of detecting and demonstrating the cause, by which Koch eventually settled the whole controversy. His choice of research was now limited to one field only, and that was to establish the channel of communication between one case and another. As early as 1849 he had investigated outbreaks in which contaminated drinking water seemed to be the most probable vehicle of infection. In Albion Terrace the drinking water was contaminated by the contents of the house-drains and cesspools, and " the cholera extended to nearly all the houses in which the water was thus tainted, and to no others." [24] Critics at that time objected that there was " entire failure of proof that the occurrence of any one case could be clearly and unambiguously assigned to the use of water. . . . Any local cause operating in one house," they said, " might fairly be considered to extend its influence to those immediately adjoining it; and whatever produced one case of cholera, might suffice to produce twenty in succession." [25] They further argued:

> We do not say that this disease may not thus be communicated to the healthy, but we consider that the facts here mentioned only raise a probability, and furnish no proof whatever of the correctness of the author's views. The *experimentum crucis* would be, that the water conveyed to a distant locality, where cholera had been hitherto unknown, produced the disease in all who used it, while those who did not use it escaped.[26]

The crucial experiment was actually performed in 1854, when a bottle of water from the Broad Street pump was taken to a widow in Hampstead and infected her and her daughter, although there were no other cases in the area. The scale of the experiment was far too small to make any impact on those who observed it, and even Snow does not seem to have appreciated its full significance. Snow's interests lay in other directions, and he paid little attention to the advice proffered by the *Medical Gazette*. By 1850 his plan of action had become clearly defined. This was to trace the route of transmission wherever this was possible, and where it was not possible to show that the disease spread most extensively where there were the greatest facilities for the swallowing of excretions.[27]

The limitations of this comparatively unambitious programme have not always been understood. At the most it could establish the plausibility

[24] Snow: *On the Mode of Communication of Cholera*, 1849, p. 15.
[25] *London M. Gaz.*, 1849, n. s. *9*: 466. [26] *Ibid.* [27] *Lancet*, 1850, *1*: 154.

of Snow's theory without ever being able to exclude the principal rival hypotheses. In particular it could no nothing to decide the question of whether the association between polluted drinking water and cholera was due to the distribution of the actual cause, or due to a predisposition which made its consumers more susceptible to an aerial poison. Snow hardly seemed interested in designing an experiment to that end. He was a convinced unifactorialist and dismissed the idea of multifactorial causation as "a metaphysical abstraction assumed to account for the facts." [28]

So the well-known comparison of the cholera mortality in the customers of the Lambeth and the Southwark and Vauxhall water companies had, as far as Snow was concerned, the simple object of showing that cholera spread most extensively where the greatest facilities for swallowing excretions existed. In other words, it was to supplement defects in tracing the actual route of infection. If it had been intended to demonstrate a causal connection, even Snow would have realised that his method of identifying the source of water, from its chloride content, would invalidate an inference of that kind.

The results of this investigation which has occupied such a prominent place in 19th century sanitary mythology may be fairly stated as follows: It disposed of the evidence of the Newcastle observations which showed no difference in the cholera mortality between those who drank company water and those who drank pure spring water. It added further weight to that part of Snow's argument which was no longer in need of proof. It had no influence on the schemes for the improvement of South London's water supplies which were originally promoted in 1848.[29] Indeed it was these improvements which made the investigation possible. It played no part in leading Snow to propose his theory that cholera was a water-borne disease, which, as has been shown, came into being six years earlier.

Some confusion on this last point has centred round Snow's belief that the mode of communication could have been arrived at on the epidemiological evidence, independently of the pathology of the disease.[30] He had every reason for wanting this view accepted, since it would have distracted attention from the actual means of discovery. However, as he believed on similar evidence that plague, dysentery, intermittent fevers, yellow fever, and typhoid were transmitted in the same way, and as Ross was beguiled into wasting a good deal of valuable time as a result of the belief, it is clear that his methods are not based on principles worthy of uncritical and universal imitation.

[28] *Ibid.*, 1854, *1*: 109. [29] *Ibid.*, 1848, *1*: 103.
[30] Snow: *On the Mode of Communication of Cholera*, 1855, p. 16.

John Snow and William Budd

The fact that Snow's methods of investigation did not necessarily lead to correct predictions, as was seen in their application to diseases other than cholera, provides an excuse for those of his contemporaries who were not over-enthusiastic in the acceptance of his ideas. Among the first to whom Snow mentioned his new theory, as early as 1848, were Drs. E. A. Parkes and A. Garrod. Many years later, in 1864, Parkes explained his lack of interest:[21]

> There seemed at once an *a priori* argument adverse to this view, as, at that time, all evidence was against the idea of cholera evacuations being capable of causing the disease. They had been tasted and drunk (in 1832) by men, and been given to animals, without effect. Persons inoculated themselves in dissections constantly, and bathed their hands in the fluids of the intestines; in India, the pariahs who remove excreta, and everywhere the washerwomen who washed the clothes of the sick, did not especially suffer. And to these arguments must be added the undoubted fact, that there were serious deficiencies of evidence in Dr. Snow's early cases. Add to this the unfortunate circumstance, that Dr. Snow, with all the enthusiasm of a discoverer, adopted the view that cholera entered only by means of water, and not at all by air, an hypothesis which is quite irreconcilable with the history of cholera, and thereby created at once a prejudice against his view, and it is no wonder that this alleged mode of entry gained little credence.

In our present position we are able to see that the answers to nearly all these objections lie in our understanding of the nature of the cholera vibrio and the properties of micro-organisms in general. In this respect Budd was extraordinarily far-sighted in his original judgment of Snow's paper. That does not mean to say that Snow would have been well advised to devote his energies to the investigation of the actual cause of cholera, for he had none of the qualities or the opportunities which favoured Koch and Pasteur. Whichever way we look at it, we are forced to conclude that Snow had hit on an idea which he had not the means nor the abilities to put to the test.

The first of his difficulties came from the fact that his original inspiration was the result of a haphazard process of reasoning which no later rationalisation could ever turn into a convincing argument. The second came from the circumstances in which he attempted to demonstrate the route of transmission from one group of cases to another. A severe epidemic in a crowded city produces a situation in which all kinds of routes of transmission will intersect in many ways and presents an epidemiological problem which is complex enough, even when the basic

[21] E. A. Parkes: *A Manual of Practical Hygiene*. London: Churchill, 1864, p. 57.

mechanisms are not under dispute. It was a great misfortune that he was not a country practitioner.

William Budd was in a far better position to make use of the opportunities available at that time. It is quite clear that he had arrived at his conclusion by the systematic observation of small epidemics in rural areas. In May 1849 he had traced the entrance of cholera into Bristol:

> From the first outbreak of the disease at Keynsham, on the bank of a stream which feeds the Avon, about eleven miles above Bristol, to its subsequent appearance at Hanham, on the Avon itself, and then at Cruwys Hole, and at the Bristol Cotton Works a little lower down the river; from its transference thence to Redcross-street, and its spread there in the way already described, to its next frightful outbreak in the Rackhay, and the succession of similar outbreaks by which this one has since been followed, we see so many illustrations of the propagation of cholera by means in which it must be plain to the commonest observer that water took the leading part.[32]

He had observed "the frightful fatality of the disease in particular parts of infected towns, in which the drinking-water of the inhabitants has been *known* to be contaminated by the contents of sewers."[33] But above all he had perceived the similarity between cholera and a disease capable of providing far more convincing proof of water-borne transmission than cholera, with its terrifying infectivity, could ever afford. In the late summer of 1847, typhoid had broken out in Richmond Terrace, Clifton—a middle-class district of Bristol. The pump, from which thirteen of the thirty-four houses obtained their water, became contaminated with sewage in September. A few weeks later cases occurred in these thirteen houses, and no others, although they were distributed at random in the terrace, and there was no special social communication between them.[34] A number of years later the transmission of typhoid between two groups of cottages in the Kingswood area and connected in no other way except by a stream which passed by both of them provided Budd with another example of the way in which water-borne infection can be legitimately inferred without calling on bacteriological evidence. If it had not been for Budd's premature adoption of the fungus theory, correct as we know in its basic principles, his more careful epidemiological studies might well have supplanted those of Snow in the history of preventive medicine. Detailed local studies, in contradistinction to the analysis of mass statistical data, have not proved unrewarding to those who, like Pickles,[35] have been wise enough to understand their advantages.

[32] Budd, *op. cit.*, p. 19.
[33] *Ibid.*
[34] W. Budd: *Typhoid Fever*. London: Longmans, Green, and Co., 1873.
[35] W. N. Pickles: *Epidemiology in Country Practice*. Bristol: John Wright, 1939.

BIBLIOGRAPHY OF THE HISTORY OF MEDICINE OF THE UNITED STATES AND CANADA—1960 *

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BIOGRAPHY

Abbott, Maude E. S., ABBOTT, MAUDE E. S.: Autobiographical sketch (1928). *McGill M. J.*, 1959, *28*, 127-52.

Adams, John Cain. SHASTID, T. H.: The laughing doctor. *Wisconsin M. J.*, 1960, *59*, 546-47.

Addams, Jane. Looking back—Jane Addams and Lillian Wald. *Nursing Outlook*, 1960, *8*, 492.

Alcott, Louisa May. ALCOTT, LOUISA MAY: *Hospital sketches.* Ed. by Bessie Z. Jones. John Harvard Library. Cambridge, Mass.: Belknap Press of Harvard University Press, 1960, xliv, 91 pp.

Allen, John Marshall. B[EATTY], W. K.: Dr. John Marshall Allen, 1833-1910. *News (M. Library, U. of Missouri)*, 1960, *5* (2), 3-5.

Allen, Norman McLeod. MOEHLIG, R. C.: Norman McLeod Allen. *Harper Hosp. Bull.*, 1960, *18*, 291-93, port.

Andrews, Edward Wyllis. RAVITCH, M. M. and HITZROT, J. M.: The operations for inguinal hernia. *Surgery*, 1960, *48*, 439-66, ports., illus.

Austin, W. O. TOWERS, FRED: A biography of the late Mr. W. O. Austin. *Bull. Ontario Coll. Pharm.*, 1960, *9*, 43-44.

Ballin, Max. MOEHLIG, R. C.: Dr. Max Ballin. *Harper Hosp. Bull.*, 1959, *17* (1), 28-31, port.

Banting, Frederick G. LEVINE, ISRAEL E.: *The discoverer of insulin: Dr. Frederick G. Banting.* New York: Messner, 1960.

Barnes, Albert C. SCHACK, WILLIAM: *Art and Argyrol; the life and career of Dr. Albert C. Barnes.* New York: Thomas Yoseloff, 1960, 412 pp.

Beaumont, William. BEAUMONT, W.: *Experiments and observations on the gastric juice and the physiology of digestion.* Introductory essay by Sir William Osler. New York: Dover Publications, 1959. [Reprint].

——. HALL, D. P.: Our surgical heritage. — William Beaumont. — Abraham Colles. *Am. J. Surg.*, 1960, *99*, 257-59, ports.

——. PODOLSKY, E.: William Beaumont and the mysteries of digestion. *West Virginia M. J.*, 1960, *56*, 345-48.

Bennett, John Hughes. KING, L. S.: The medical revolution. *Quart. Bull. Northwestern Univ. M. School*, 1960, *34*, 358.

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This Bibliography has appeared annually in the *Bulletin* since 1940.

Best, Charles Herbert. BEST, C. H.: Unfinished researches. *Quart. Bull. Northwestern Univ. M. School,* 1959, *33*, 300-3.

——. WOLFF, G.: Beiträge berühmter Studenten zur Erforschung des Zuckerstoffwechsels. *Münchner Med. Wochenschrift,* 1960, *102*, 1203-8, ports.

Billings, John Shaw. FRENCH, J. D. and DARLING, L.: The surgical treatment of epilepsy in 1861. *J. Internat. Coll. Surgeons,* 1960, *34*, 685-91, port., illus.

Blackwell, Elizabeth. GUION, C. M.: Contribution of medical women to society. *J. A. M. Women's A.*, 1960, *15*, 764-70.

Bolton, James. ARRINGTON, G. E.: James Bolton, surgeon-oculist. His place in the history of ophthalmology. *Virginia M. Monthly,* 1960, *87*, 479-90, ports., illus.

Boswell Henry. O'MARA, B. B.: Conqueror of the white death. [Henry Boswell, M. D., 1884-1957.] *J. Mississippi M. A.*, 1960, *1*, 317-19.

Bransky, Joseph M. Joseph M. Bransky. *Am. J. Pharm.*, 1960, *132*, 352 & cover, port.

Brindley, G. V. Profile in leadership. Medicine's G. V. Brindley of Temple, Texas: . . . *Texas J. Med.*, 1960, *56*, 829-30.

Brinkley, John Richard. CARSON, GERALD: *The roguish world of Doctor Brinkley.* New York: Rinehart, 1960, 280 pp., illus.

Brockman, William Thomas. GUESS, J. DECHERD: The Greenville County Medical Society historical sketches. Greenville's elder statesman. *J. South Carolina M. A.*, 1960, *56*, 18-21.

Brown, B. B. MCDERMOTT, J. F.: Dr. Brown's St. Louis. *Missouri Hist. Rev.*, 1960, *54*, 245-53, illus.

Bryce, Peter. CARMICHAEL, E. B.: Peter Bryce. *Am. Surgeon,* 1960, *26*, 750-55, port.

Cabot, Richard. Dr. Cabot's case records; Fiftieth anniversary of the C. P. C. *Physician's Bull.*, 1960, *5*, 20-22.

Caldwell, Charles. HORINE, E. F.: *Biographical sketch and guide to the writings of Charles Caldwell, M. D. (1772-1853).* Brooks, Ky.: High Acres Press, 1960.

Callahan, John R. BLACK, F. W.: John R. Callahan 1853-1918. *Ohio Dent. J.*, 1960, *34*, 189-93.

Cannon, Walter Bradford. MERKULOV, V. L.: I. P. Pavlov's scientific connections with W. B. Cannon. [Russian.] *Fiziol. Z. (Mosk.)*, 1960, *46*, 501-5, illus.

Carnrick, John. Reed & Carnrick: a century of pharmacy. *M. Times* (N. Y.), 1960, *88*: (1) 122-28, port., illus.

Caton, Richard. BRAZIER, M. A. B.: Richard Caton, the discoverer of the electrical activity of the brain. *Spike and Wave (Winnipeg)*, 1958, *7* (4), 12-20, ports.

Chown, Henry Havelock. MITCHELL, R.: Manitoba surgical pioneers. James Kerr (1849-1911) and H. H. Chown (1859-1944). *Canad. J. Surgery,* 1960, *3*, 281-85, ports., illus.

Clark, Burton. RADFORD, T.: A 1900 doctor: Dr. Burton Clark. *Wisconsin M. J.*, 1960, *59*, 386-88, port.

Clayton, John. ZIRKLE, C.: John Clayton and our colonial botany. *Virginia Mag. Hist. Biog.*, 1959, *67*, 284-94.

Clendening, Logan. CAVANAGH, G. S. T.: The Clendening collection. *Bull. M. Library A.*, 1960, *48*, 190-94.

Cobb, Isabel. Dr. Isabel Cobb. Her

times and ours. *J. Oklahoma M. A.*, 1960, *53*, 129-30, port.

Coca, Arthur F. Arthur F. Coca, founder of the Journal of Immunology. *J. Immunol.*, 1960, *85*, 330-31, port.

Cochran, Jerome. CARMICHAEL, E. B.: Jerome Cochran: the guiding genius in public health legislation in Alabama. *De Historia Medicinae* [Alabama], 1960, *4* (1), 30 (Abstr.).

——. PARTIN, ROBERT: Dr. Jerome Cochran, yellow fever fighter. *Alabama Rev.*, 1960, *13*, 21-39.

Collins, Selwyn D. UNITED STATES, PUBLIC HEALTH SERVICE: *Selwyn D. Collin's contributions to health statistics; a guide to his works.* (Publication no. 737, Public health monograph no. 62.) Washington: U. S. Dept. of Health, Education & Welfare, Public Health Service, 1960, 14 pp.

Columbus, Christopher. VACCARO, LEOPOLD S.: Saga of Columbus; Parts played by two physicians in his discoveries. *Philadelphia Med.*, Oct. 28, 1960, 1260-63.

Cone, Claribel. Eccentric esthetes. The remarkable Dr. Claribel Cone. *MD M. Newsmag.*, 1960 *4* (2), 94-99, port., illus.

Cone, William Vernon. ENTIN, M. A.: Dr. William Vernon Cone: an appreciation. *McGill M. J.*, 1960, *29*, 63-69, port.

Conwell, Russell H. BECKLEY, A. G.: Russell H. Conwell—"a great and noble man." *Temple Univ. M. Center Bull.*, 1960, *6* (3), 4-6, port., illus.

Cook, Roy Bird. Roy Bird Cook named Honorary President of the American Institute of the History of Pharmacy. *Pharm. Hist.* (*Madison*), 1960, *5*, 47, port.

Côté, Cyrille Hector Octave. LEBLOND, S.: Le docteur Cyrille Hector Octave Côté et le mouvement Baptiste Français au Canada. *Laval méd.*, 1960, *30*, 633-41.

Cronin, Archibald Joseph. DAVID, I. E. J.: The faith and adventures of Dr. A. J. Cronin. *J. Christ. M. A. India*, 1960, *35*, 283-86.

Crossen, Kossuth T. SWETT, CHESTER P.: Captain Kossuth T. Crossen, M. D., patriot, soldier, physician. *Ohio M. J.*, 1959, *55*, 1644-46.

Cullimore, Thomas. CULLIMORE, C.: Perry's first doctor. *Chron. Oklahoma*, 1960, *38*, 191-95, illus.

Cushing, Harvey Williams. Scalpel saga. A historical survey of surgery. *MD M. Newsmag.*, 1960, *4* (5), 96-104, ports., illus.

——. ALMEDA, M. F.: Harvey Cushing (father of neurosurgery). *J. Philippine M. A.*, 1960, *36*, 442-47, port.

——. GLENN, F.: Harvey Cushing and Cushing's syndrome. *University of Michigan M. Bull.*, 1960, *26*, 63-77.

Cutler, Manasseh. NEWCOMER, L. N.: Manasseh Cutler's writings: a note on editorial practice. *Mississippi Valley Hist. Rev.*, 1960, *47* (1), 88-101.

Dadd, George H. EBY, C. H.: George Dadd—veterinarian, author, teacher. *Mich. U. Vet.*, 1960 (Fall), 14-17, port.

Darrow, Clarence. See *Roosevelt, Franklin Delano.*

Deaver, John B. RAVDIN, I. S.: John B. Deaver—Master surgeon. *Philad. Med.*, 1960, *56*, 741, 743, 745, 747, 749, illus.

Dickson, Samuel Henry. WARING, JOSEPH IOOR: Samuel Henry Dickson (1798-1872). *J. M. Educ.*, 1960, *35*, 421-28.

Dimon, Theodore. ROBERTSON, JAMES I., JR.: A Federal surgeon at Sharps-

burg [Dr. Theodore Dimon, 2d Md. Rgt.]. *Civil War Hist.*, June 1960.

Donald, Dan Caldwell. CARMICHAEL, E. B.: Dan Caldwell Donald. *De Historia Medicinae,* [*Alabama*] 1960, *4* (2), 2-3.

Dorsey, John Syng. HALL, D. P.: Our surgical heritage.—John Syng Dorsey.—John Abernethy. *Am. J. Surg.*, 1960, *99*, 127-28, ports.

Dowler, Bennet. VAN LIERE, E. J.: Bennet Dowler, Charlesburg physician and physiologist. *West Virginia M. J.*, 1960, *56*, 241-43.

Drake, Theodore George Harwood. Obituary. *J. Hist. Med.*, 1960, *15*, 302-3.

——. SCHADEWALDT, H.: Theodore G. H. Drake, O. B. E., M. B., F. R. C. P.(C.). *Sudhoffs Arch. Gesch. Med.*, 1960, *44*, 86-87, bibliog.

——. SILVERTHORNE, L. N. and BROWN, ALAN: Theodore G. H. Drake, O. B. E., M. B., F. R. C. P. [C.]; an appreciation. *Canad. M. A. J.*, 1960, *82*, 45.

Draper, William Henry. OLCOTT, C. T.: Pathology at the New York Hospital, 1810-1932. *Bull. Hist. Med.*, 1960, *34*, 137-47, port.

Dubé, Edmond. DESJARDINS, EDOUARD.: Edmond Dubé (1894-1960). *L'Union Méd. Canad.*, 1960, *89*, 551-54, port.

Dubos, René J. WAKSMAN, SELMAN A.: René J. Dubos—a tribute. *J. A. M. A.*, 1960, *174*, 503-5.

Dudley, Benjamin Winslow. HALL, D. P.: Our surgical heritage: Benjamin Winslow Dudley and James Syme. *Am. J. Surg.*, 1960, *99*, 386-89, ports.

Dunglison, Robley. GEMMIL, C. L.: The educational work of Robley Dunglison, M. D., at the University of Virginia. *Virginia M. Monthly*, 1960, *87*, 307-9.

——. See *Jefferson, Thomas.*

Emmet, Thomas Addis. MUIRHEAD, J. F.: Doctors afield. Thomas Addis Emmet and William James MacNeven. *New England J. Med.*, 1960, *262*, 460-61.

Fenger, Christian. FISHBEIN, M.: Christian Fenger. *J. Internat. Coll. Surg.*, 1960, *33*, 98-108, port.

Ferguson, Alexander Hugh. See *Andrews, Edward Wyllis.*

Ferguson, Daniel. BLAKE, J. B.: Mr. Ferguson's hypodermic syringe. *J. Hist. Med.*, 1960, *15*, 337-41, illus.

Fielding, E. N. STOUT, WALTER C.: Dr. E. N. Fielding, an early Texas peripatetic dentist. *Baylor Dent. J.*, 1960, *10* (Spring), 4-5.

Fitzgerald, F. Scott. See *Roosevelt, Franklin Delano.*

Flexner, Abraham. FLEXNER, ABRAHAM: *An autobiography.* Introduction by Allan Nevins. New York: Simon & Schuster, 1960.

——. GARDNER, JOHN W.: Abraham Flexner, pioneer in educational reform. *Science*, 1960, *131*, 594-95, port.

——. ORR, L. M.: Medicine's debt to Abraham Flexner. *J. A. M. A.*, 1960, *173*, 1429-31.

——. RICHARDS, A. N.: Dr. Abraham Flexner. *Nature* (*Lond.*), 1960, *186*, 278-79.

——. STRAUSS, L. L.: Lasting ideals of Abraham Flexner. *J. A. M. A.*, 1960, *173*, 1413-16.

——. Abraham Flexner—medical missionary extraordinary. *Clin. Pharmacol. Ther.*, 1960, *1*, 545-50.

Flint, Austin, Sr. SHAFTEL, NORMAN: Austin Flint, Sr. (1812-1886): educator of physicians. *J. M. Educ.*, 1960, *35*, 1122-35, ports, illus.

Forbes, Isaiah. SWEET, A. P. S.: Isaiah Forbes, pioneer St. Louis dentist. *Dent. Radiogr. & Photogr.*, 1960, *33*, 70, 90.

Francis, William Willoughby. FULTON, J. F.: William Willoughby Francis, M. D. 1878-1959. *J. Hist. Med.*, 1960, *15*, 1-6, port.

——. LEIBOWITZ, J. O.: Dr. W. W. Francis (1878-1959). *Koroth*, 1960, *2*, 281-83.

——. MACNALTY, Sir A. S.: W. W. Francis, A. B., M. D. (1878-1959). *Med. Hist.*, 1960, *4*, 163-66, port., bibliog.

——. STEVENSON, L. G.: W. W. Francis 1878-1959. *Bull. Hist. Med.*, 1960, *34*, 373-78, port.

Franklin, Benjamin. ANDRADE, E. N. da C. and MARTIN, D. C.: The Royal Society and its foreign relations. *Endeavour*, 1960, *19*, 72-80, col. ports., illus.

Fraser, Donald. CAMERON, G. D. W.: The first Donald Fraser memorial lecture. *Canad. J. Pub. Health*, 1960, *51*, 341-48.

Fulton, John Farquhar. BUCY, P. C.: John Farquhar Fulton, M. D. 1899-1960. *Arch. Neurol. Psychiat.* (*Chicago*), 1960, *3*, 606-9, port.

——. DAVEY, L. M.: John Farquhar Fulton. 1899-1960. *J. Neurosurg.*, 1960, *17*, 1119-1123, port.

——. FISCHER, H.: John F. Fulton (1899-1960). *Gesnerus* (*Aarau*), 1960, *17* (1-2), 72-73.

——. FRANKLIN, K. J.: Prof. John F. Fulton. *Nature* (*Lond.*), 1960, *187*, 110-11.

——. GIBSON, W. C.: A memorial tribute: John Farquhar Fulton, M. D. (Harvard), D. Phil. (Oxon.) 1899-1960. *Pharos* (*London*), 1960, *23*, 227-28.

——. IZQUIERDO, J. J.: John F. Fulton. Su vida, su obra y su amistad. *Acad. Nac. Med. Mex.*, 1960, October.

——. LANGLEY, L. L.: John Farquhar Fulton. *De Historia Medicinae* [Alabama], 1960, *4* (July), 3-6.

——. LEAKE, C. D.: John Farquhar Fulton, 1899-1960. *Isis*, 1960, *51*, 560-62.

——. LEIBOWITZ, JOSHUA O.: John F. Fulton (1899-1960). *Koroth*, 1960, *2*, 387-88.

——. MACLEAN, P. D.: John F. Fulton (1899-1960), a midsummer reminiscence. *Yale J. Biol. Med.*, 1960, *33*, 85-93.

——. PERKINS, H. T.: John Farquhar Fulton, M. D. *Bull. M. Library A.*, 1960, *48*, 548-51.

——. WALKER, A. E.: John Farquhar Fulton. *De Historia Medicinae* [Alabama], 1960, *4* (3-4), 3-6.

——. ——: John Farquhar Fulton, 1899-1960. *J. Neurophysiol.*, 1960, *23*, 347-49, port.

——. *Memorial service, John Farquahar Fulton, Battell Chapel, Yale Univrsity, 1 June 1960.* New Haven: Yale University Press, 1960.

——. John Farquhar Fulton (1899-1960). *Lancet*, 1960, i, 1301-2, port. *Brit. M. J.*, 1960, i, 1815-16, 1963, port.

——. Obituary. *New England J. Med.*, 1960, *262*, 1340-41, port.

——. Obituary. *Book Collector*, 1960, *9*, 262-64.

——. Dr. John F. Fulton: scientist-scholar. *MD M. Newsmag.*, 1960, *4* (7), *77*, port.

——. John Farquhar Fulton. *Ciencia* (*Méx.*), 1960, *20*, 218-19.

——. Fulton, John Farquhar. *J. A. M. A.*, 1960, *173*, 1260-61.

Gamble, James Lawder. JANEWAY, CHARLES A.: James Lawder Gamble (1883-1959). *J. Pediat.*, 1960, *56*, 701-8, port., bibliog.

——. WALLACE, WILLIAM M.: An account of the origins of the investigations of James L. Gamble

and an analysis of his contributions to physiology and medicine. *Pediatrics*, 1960, *26*, 899-902.

——. A tribute to James L. Gamble, M. D. *Pediatrics*, 1960, *26*, 897-98, port.

Garrison, Fielding H. Pioneer historian. The story of Dr. Fielding Garrison. *MD M. Newsmag.*, 1960, *4* (6), 184-88, ports.

Gershwin, George. See *Roosevelt, Franklin Delano.*

Goldberger, Joseph. Joseph Goldberger (1874-1929). *Ann. New York Acad. Sci.*, 1960, *85*, Art. 1, port.

Goodpasture, Ernest W. ANDREWES, C. H.: Prof. E. W. Goodpasture. *Nature*, 1960, *188*, 623-24.

Greenfield, Charles Bailey. In memoriam. Doctors of Hawaii. XXIII. *Hawaii M. J.*, 1959, *19*, 181, port.

Greenstein, Jesse Philip. WINITZ, MILTON and others: Jesse Philip Greenstein, 1902-1959. *J. Nat. Cancer Inst.*, 1960, *24*, vii-xxx, port., bibliog.

Greenwood, John. SWEET, A. P. S.: John Greenwood: Washington's dentist. *Dent. Radiogr. & Photogr.*, 1960, *33*, 1, 41.

Gross, Samuel David. HALL, D. P.: Our surgical heritage. [Samuel David Gross and Alfred Armand Louis Marie Velpeau.] *Am. J. Surgery*, 1960, *99*, 974-77, ports.

Hall, Granville Stanley. BURNHAM, J. C.: Sigmund Freud and G. Stanley Hall: exchange of letters. *Psychoanal. Quart.*, 1960, *29*, 307-16.

Halsted, William Stewart. BLALOCK, A.: A boyhood portrait of William Stewart Halsted (1852-1922). *Bull. Hist. Med.*, 1960, *34*, 195-98, port.

——. BECKHARD, A. J. and CRANE, W. D.: *Cancer, cocaine and courage: the story of Dr. William Halsted.* New York: Messner, 1960.

——. RAVITCH, M. M. and HITZROT, J. M.: The operations for inguinal hernia. *Surgery*, 1960, *48*, 439-66, 615-36, ports., illus.

Hamilton, Thomas Glendenning. MITCHELL, R.: Dr. T. Glen Hamilton, the founder of the Manitoba Medical Review. *Manitoba M. Rev.*, 1960, *40*, 219-21.

Hammer, Adam. MAJOR, R. H.: Adam Hammer und das Humboldt-Institut, eine deutsche medizinische Akademie in St. Louis, U. S. A. *Sudhoffs Arch. Gesch. Med.*, 1960, *44*, 76-80.

Happoldt, Christopher. The Christopher Happoldt journal. Edited with preface and biographies by Claude Henry Neiffeur. Charleston, S. C.: The Charleston Museum, 1960.

Harrison, Ross Granville. NICHOLAS, J. S.: Ross Granville Harrison, experimental embryologist. *Science*, 1960, *131*, 337-39, port.

——. ——: Ross Granville Harrison, 1870-1959. *Yale J. Biol. Med.*, 1960, *32*, 407-12, port.

Hartman, Samuel Brubacker. HOLBROOK, S. H.: Dr. Hartman's peruna. [From his "The golden age of quackery." Macmillan 1959.] *Ohio M. J.*, 1960, *56*, 918-20, 1078-80.

Heilprin, Angelo. SEIDE, J.: Angelo Heilprin—an early American Darwinist. [Hebrew and English.] *Hebrew M. J.*, 1960, *33*, 102-6; 187-93.

Henderson, Yandell. HAMILTON, W. F.: Frank, Henderson and Starling. *Am. Heart J.*, 1960, *59*, 803-6.

Henry, Anson G. BLAIR, H. C.: Anson G. Henry, Lincoln's physician and friend. (Abstract.) *Bull. Am. Coll. Surgeons*, 1960, *45*, 174-75.

Hepburn, H. H. HEPBURN, H. H.: The evolution of medical practice during

one man's life time. *Alberta M. Bull.*, 1959, *24*, 127-32.

Herrick, Charles Judson. BARTELMEZ, GEORGE W.: Charles Judson Herrick, neurologist. *Science*, 1960, *131*, 1654-55, port.

——. O'LEARY, J. L. and BISHOP, G. H.: C. J. Herrick and the founding of comparative neurology. *Arch. Neurol. Psychiat.*, 1960, *3*, 725-31, port.

——. *J. Comp. Neurol.*, 1960, *115*, 3-8.

Hess, Alfred Fabian. DARBY, W. J. and WOODRUFF, C. W.: Alfred Fabian Hess—a biographical sketch (1875-1933). *J. Nutrition*, 1960, *71* (1), 3-9, port.

Higley, Brewster. Medical ballader, the long-lost author of "Home on the range." *MD M. Newsmag.*, 1960, *4* (5), 157-59, port.

Hitchens, Arthur Parker. LUCCHESI, P. F.: Colonel A. Parker Hitchens, M.D. *Tr. & Stud. Coll. Phys. Philad.*, 1960, *27*, 107.

——. MUDD, S.: The Arthur Parker Hitchens lecture fund. *Tr. & Stud. Coll. Phys. Philad.*, 1960, *27*, 114-15, port.

——. ROGERS, FRED B.: The Arthur Parker Hitchens Lectureship: A memorial tribute. *Tr. & Stud. Coll. Phys. Philad.*, 1960, 4 Ser., *27*, 116-17.

Holmes, Oliver Wendell. ATCHLEY, D. W.: The uses of elegance. [Nineteenth century candidates for the Gold Headed Cane.] *Ann. Int. Med.*, 1960, *52*, 881-89.

——. BIGGERS, W. H.: Oliver Wendell Holmes: his final face. *J. Bowman Gray School Med.*, 1959, *17*, 62-64.

——. LANIER, ELEANOR B. and THOMAS, MARTHA LOU: Historical Collections within the Lawrence Reynolds Library. Oliver Wendell Holmes. *De Historia Medicinae* [Alabama], 1960, *4* (July), 18-20.

——. UNIVERSITY OF VIRGINIA, BARRETT LIBRARY: *Oliver Wendell Holmes; a checklist of printed and manuscript works of Oliver Wendell Holmes in the Library of the University of Virginia.* Charlottesville, Va.: University of Virginia Press, 1960.

Hopkins, Johns. PARKER, F.: Influences on the founder of the Johns Hopkins Hospital. *Bull. Hist. Med.*, 1960, *34*, 148-53.

Hudson, Edward. SWEET, A. P. S.: Edward Hudson, political exile and pioneer dentist. *Dentl. Radiogr. & Photogr.*, 1960, *33*, 1, 65.

Ives, Eli. GREENE, N. M.: Eli Ives and the medical use of ether prior to 1846. *J. Hist. Med.*, 1960, *15*, 297-99.

James, Jesse Woodson. Did Badger doctor treat Jesse James? *Wisconsin M. J.*, 1960, *59*, 216.

Janeway, Theodore Caldwell. ATCHLEY, D. W.: The uses of elegance. [Nineteenth century candidates for the Gold Headed Cane.] *Ann. Int. Med.*, 1960, *52*, 881-89.

Jefferson, Thomas. BEAN, W. B.: Mr. Jefferson's influence on American medical education. *Virginia M. Monthly*, 1960, *87*, 669-80, port., illus.

——. DORSEY, J. M., Ed.: *The Jefferson-Dunglison letters.* Charlottesville: University of Virginia Press, 1960.

——. See *Peale, Charles Willson.*

Johnson, Edward Mead. E. Mead Johnson's mission: Feeding babies better. *Am. Professional Pharmacist*, 1960, *26*, 564-69, 582, ports., illus.

Jones, Joseph. RILEY, H. D.: Joseph Jones: Confederate surgeon. *J.*

Tennessee M. A., 1960, *53*, 493-504, port.

Jones, T. Duckett. An esteemed physician, teacher, investigator, and medical statesman. (Edit.) *J. A. M. A.*, 1960, *174*, 882-83.

Judd, Gerrit Parmele. JUDD, GERRIT P., IV: *Dr. Judd, Hawaii's friend: a biography of Gerrit Parmele Judd (1803-1873)*. University of Hawaii Press, 1960, 300 pp., illus.

Keller, Helen Adams. "Miracle worker." Dramatic play around Helen Keller. *MD M. Newsmag.*, 1959, *3* (12), 48-51, illus.

Kelley, Florence. Florence Kelley (1859-1932): architect of a better world for children. *Am. J. Pub. Health*, 1959, *49*, 1684.

Kerr, James. See *Chown, H. H.*

Kisch, Bruno. A tribute to Dr. Bruno Kisch on the occasion of his 70th birthday. *J. Hist. Med.*, 1960, *15*, 335-36, port.

Krech, Shepard. CRAIG, H. R.: Citation and presentation of the Academy plaque to Shepard Krech. *Bull. New York Acad. M.*, 1960, *36*, 235-37, port.

La Terrière, Pierre de Sales. The Harvard Medical School in 1788-89. Mémoires de Pierre de Sales La Terrière et de ses traverses. *Harvard M. Alumni Bull.*, Oct. 1960, 20-25.

Lawrence, David Herbert. Famous TB's in history. (XXI) D. H. Lawrence. *Santa Fe Mag.*, 1960, *9*, 6, port.

Lawrence, G. K. BERMAN, ALEX: An unpublished letter from G. K. Lawrence to C. S. Rafinesque, October 8, 1828. *Bull. Hist. Med.*, 1960, *34*, 461-70, illus.

Lee, Robert E. KRANTZ, JOHN C.: The implications of the medical history of General Lee. *U. S. Armed Forces M. J.*, 1960, *11*, 329-37.

Leone, Lucille Petry. "HM" salutes Lucille Petry Leone. *Hospital Management*, 1960, *90* (Sept.), 21, port.

Lincoln, Abraham. STEWART, J. E.: The scythe, the caduceus and the emancipator. *Marquette M. Rev.*, 1960, *25*, 197-200.

Linde, Christian. LINE, SANDRA: A doctor in retrospect [Dr. Christian Linde, Oshkosh]. *Wisconsin M. J.*, 1960, *59*, 166-68.

Lining, John. MENDELSOHN, E.: John Lining and his contribution to early American science. *Isis*, 1960, *51*, 278-92.

Linn, Lewis Fields. B[EATTY], W. K.: Dr. Lewis Fields Linn, 1795-1843. *News (M. Library, U. of Missouri)*, 1960, *5* (1), 5-6.

Lischer, Benno. KHALIFAH, ELIAS S.: Benno Lischer, and the hybrid called dental education. *J. Missouri Dent. A.*, 1960, *40*, 10-17.

Loeb, Leo. BLUMENTHAL, HERMAN T.: Leo Loeb, experimental pathologist and humanitarian. *Science*, 1960, *131*, 907-8, port.

——. HARTROFT, W. STANLEY: Leo Loeb, 1869-1959. *Arch. Path.*, 1960, *70*, 269-74, port.

——. ROUS, PEYTON: Leo Loeb (1869-1959). *Cancer*, 1960, *13*, 436-38, port.

——. SUNTZEFF, V.: Leo Loeb, 1869-1959. *Cancer Res.*, 1960, *20*, 972-73, port.

Loewi, Otto. LOEWI, O.: An autobiographic sketch. *Perspect. Biol. Med.*, 1960, *4* (1), 3-25, port.

Long, C. W. LONG, C. W.: An account of the first use of sulphuric ether by inhalation as an anaesthetic in surgical operations. *Survey Anesth.*, 1960, *4*, 120-26.

Loomis, Mahlon. PROSKAUER, C.: Der amerikanische Zahnarzt Mahlon

Loomis. *Zahnärztl. Mitt.*, 1960, *48*, 483-87.

Lutz, Brenton Reid. *Science*, 1960, *132*, 721-22.

Lydenberg, Harry M. Harry M. Lydenberg, 1874-1960. *Nat. Library Med. News*, 1960, *15* (5), 4.

McDowell, Ephraim. BIRCH, J. C.: The effect of the McDowell operation on the growth of surgery. *J. Kentucky M. A.*, 1960, *58* (1), 63-65.

——. CRAWFORD, W. M.: Stamp honors McDowell, father of abdominal surgery. *Texas J. Med.*, 1960, *56*, 129.

——. JOY, R. J. T.: In honor of Ephraim McDowell! [Restoration of his pharmacy at Danville, Kentucky.] *J. Hist. Med.*, 1960, *15*, 93-94.

——. SONNEDECKER, G.: [Memo to members of the American Institute of the History of Pharmacy on the issuance of a McDowell postage stamp and the dedication of the McDowell Apothecary shop, Danville, Kentucky.] Madison, Wis.; American Institute of the History of Pharmacy. 1959.

——. ——: The place of drugs in the practice of medicine and surgery, 1809 and 1959. *Am. Inst. Hist. Pharmacy*, Memo to members, 1959. *J. Kentucky M. A.*, 1960, *58* (1), 62, 65-67.

——. TURNER, V. R.: Ephriam [sic] McDowell. *Ohio M. J.*, 1960, *67*, 630-32, illus.

——. McDowell apothecary shop. *Tile and Till*, 1960, *46*, 2-3, illus.

——. Museum & stamp. *Pharm. J.*, 1959, *183*: Ser. 4, *129*, 451.

——. A stamp for Ephraim. *West Virginia M. J.*, 1960, *56*, 75-76.

——. Surgical pioneer. Dr. Ephraim McDowell and his ovariotomy. *MD M. Newsmag.*, 1959, *3* (12), 181-86, ports., illus.

McKean, G. E. LOCKWOOD, B. C.: George E. McKean, M.D. *Harper Hosp. Bull.*, 1959, *17*, 323-24, port.

McKenzie, Robert Tait. LEYS, JAMES FARQUHARSON: A physical fitness shrine in Canada. *Canad. M. A. J.*, 1960, *82*, 1330-32, illus.

——. SHEK, BEN: Man from Kintail. [Robert Tait McKenzie]. *McGill News*, 1960, *42* (Winter), 27-28, ports., illus.

Macklin, Charles Clifford. BARR, MURRAY L.; BUCK, ROBERT C.; JARVIS, CHARLES E.: Dr. Charles Clifford Macklin: an appreciation. *Canad. M. A. J.*, 1960, *82*, 335.

McLoughlin, David. See *McLoughlin, John.*

McLoughlin, John. BARKER, BURT BROWN: The McLoughlin empire and its rulers: Doctor John McLoughlin, Doctor David McLoughlin, Marie Louise (Sister St. Henry). An account of their personal lives, and of their parents, relatives and children; in Canada's Quebec Province, in Paris, France, and in the west of Hudson's Bay Company. [*Northwest Hist. Series*, V.] Glendale, Calif.: Arthur H. Clark Company, 1959, 370 pp.

——. POPKIN, R. J.: Doctors afield: Dr. John McLoughlin. *New England J. Med.*, 1960, *263*, 1132-33, port.

Mac Neven, William James. See *Emmet, Thomas Addis.*

Magnuson, Paul Budd. MAGNUSON, PAUL BUDD: *Ring the night bell; the autobiography of a surgeon.* Boston: Little, Brown, 1960.

Malin, William Gunn. PIRSCENOK, A.: William Gunn Malin (1801-1887). *J. Hist. Med.*, 1960, *15*, 147-53, port.

Mann, John. A., W. H.: Dr. John Mann; an appreciation. *Canad. M. A. J.*, 1960, *83*, 1284-85.

Matas, Rudolph. COHN, ISIDORE: *Rudolph Matas: a biography of one of the great pioneers in surgery.* Garden City, N. Y.: Doubleday and Company, 1960, 431 pp.

——. ——: Rudolph Matas (1860-1957). A tribute. *J. Louisiana M. Soc.*, 1960, *122*, 325-32.

Mathers, Alvin. BELL, L. G.: Dr. Alvin Mathers. *Canad. M. A. J.*, 1960, *82*, 336-39.

Merck, George. The Merck tradition. *Am. Professional Pharmacist*, 1960, *26*, 182-89, ports., illus.

Merrell, William Stanley. Merrell of Cincinnati. *Am. Professional Pharmacist*, 1960, *26*, 628-36, 661, ports., illus.

Meyerhof, Otto. NACHMANSOHN, D. and others: Otto Meyerhof. *Biogr. Mem. Nat. Acad. Sci.*, 1960, *34*, 153-82, port., bibliog.

Middleton, Peter. TEMKIN, O.: A postscript to "Merrem's youthful dream." *Bull. Hist. Med.*, 1960, *34*, 74-75.

Miles, William Ernest. CROMAR, C. D. L.: A biographical study: W. Ernest Miles (1869-1947). *Diseases of Colon & Rectum*, 1959, *2*, 523-28.

——. GILBERTSEN, V. A.: The role of the Miles abdominoperineal excision in the history of curative rectal cancer surgery. *Surgery*, 1960, *47*, 520-28.

Mitchell, Omar Melville. MITCHELL, PAUL G.: Omar Melville Mitchell. *Bull. Ontario Coll. Pharm.*, 1960, *9*, 23-24, port.

Montague, Joseph Franklin. Dr. Montague presents proctologic library and museum to Hall of Fame. *J. Internat. Coll. Surgeons*, 1959, *32* (August), port.

Morton, William Thomas Green. BEECHER, H. K. and FORD, C.: Nathan P. Rice's "Trials of a public benefactor": a commentary. *J. Hist. Med.*, 1960, *15*, 170-83, illus.

——. LITTLE, D. M.: [Introduction of anaesthesia into surgical procedures.] *Survey Anesth.*, 1960, *4*, 119-20.

Murphy, James Bumgardner. LITTLE, C. C.: James Bumgardner Murphy. *Biogr. Mem. Nat. Acad. Sci.*, 1960, *34*, 183-203, port., bibliog.

Murphy, John Benjamin. MEYER, K. A. and HYMAN, S.: John B. Murphy: an inquiry into his life and scientific achievements. *J. Internat. Coll. Surgeons*, 1960, Sect. 1, *34* (1), 118-26, port.

Murray, Donald Walter Gordon. MURRAY, DONALD WALTER GORDON: *Medicine in the making.* Toronto: Ryerson Press, 1960.

Murray, Sydney Stewart. Dr. Sydney Stewart Murray—Obiit September 23, 1960—Aet. 60. *Brit. Columbia M. J.*, 1960, *2*, 669-70.

Nelson, Sophie. GOOSTRAY, STELLA: Sophie Nelson. *Am. J. Nursing*, 1960, *60*, 1268-69, port.

Noguchi, Hideyo. MADSEN, T.: Hideyo Noguchi. *Med. Forum* (*Kbh.*), 1960, *13*, 112-13.

Oberling, Charles. BERNHARD, W.: Charles Oberling, 1895-1960. *Cancer Res.*, 1960, *20*, 1274-76, port.

——. DELARUE, J.: Décès de M. Charles Oberling. *C. R. Soc. Biol.*, 1960, *154*, 704-6.

——. HAGUENAU, FRANÇOISE: Charles Oberling, M. D. (1895-1960). *Cancer*, 1960, *13*, 868-870, port.

——. ROUS, PEYTON: Charles Oberling, research worker on the nature of cancer. *Science*, 1960, *132*, 1534-35, port.

Olmsted, Ingersoll. JANES, R. M.: Ingersoll Olmsted 1864-1939. *Canad. J. Surgery*, 1960, *3*, 1-4, port.

Opie, Eugene L. KIDD, J. G.: Citation

and presentation of the Academy medal to Eugene L. Opie, M. D. *Bull. New York Acad. M.*, 1960, *36*, 228-34, port.

Orr, H. Winnett. A catalogue of the H. Winnett Orr Historical Collection and other rare books in the library of the American College of Surgeons. Chicago: American College of Surgeons, 1960, xxi, 198 pp., illus.

Osler, Sir William. BRAIN, Sir R.: Osler and medicine today. [Osler Oration, June 1960.] *Canad. M. A. J.*, 1960, *83*, 349-54.

——. COPE, Sir Z.: Sir William Osler, 1849-1919. *Central African J. Med.*, 1960, *6*, 307-9, port.

——. FORTUINE, ROBERT: Osler, books and medical history. *Camsi*, 1960, *19*, 9-12, 36. [Reprinted from the *McGill Med. J.*, Oct. 1958.]

——. KEITH, N. M.: William Osler at Oxford: a reappraisal. *Arch. Internal Med.*, 1960, *106*, 443-54, ports.

——. KEYS, THOMAS E.: Sir William Osler and the Mayo Clinic. *Proc. Staff Meetings Mayo Clinic*, 1960, *35*, 229-38, ports., illus.

——. MURPHY, D. A.: Osler, now a veterinarian! *Canad. M. A. J.*, 1960, *83*, 32-35.

——. NOBEL, I.: *The doctor who dared, William Osler.* New York: Messner, 1959.

——. ROGERS, FRED B.: Osler: man and influence. *Philadelphia Med.*, 1960, *56*, 1486-87.

——. SOULBURY, VISCOUNT: The physician and the humanities. *Canad. M. A. J.*, 1960, *82*, 736-41.

——. STENN, F.: Aequanimitas, an immortal achievement of Sir William Osler. *New Physician*, 1959 (November), 11-12.

——. SULLIVAN, T. J.: Osler's contributions to dermatology. *Arch. Derm.*, 1960, *82*, 487-94, ports., illus.

——. Sir William Osler, Bart. (1849-1919). By Pedhammox. [Poem.] *Maryland M. J.*, 1959, *8*, 679.

Oviatt, Charles. BORCHERS, P.: Charles Oviatt, miracle doctor. *Wisconsin M. J.*, 1960, *59*, 340-42, port.

Palmer, Errol Payne. Arizona Med., 1960, *17*, 346-51.

Papanicolaou, George N. See NAYLOR, BERNARD: under MEDICAL SCIENCE AND SPECIALTIES [History of exfoliative cancer cytology].

Parkman, George. Harvard homicide. *MD M. Newsmag.*, 1960, *4* (3), 182-93, illus.

Paton, Stewart. FARRAR, C. B.: Historical notes: I remember Stewart Paton. *Am. J. Psychiatry*, 1960, *117*, 160-62.

Peale, Charles Willson. ROGERS, FRED B.: A guide to health—"An epistle to a friend" (Thomas Jefferson) by Charles Willson Peale. *Tr. & Stud. Coll. Phys. Philad.*, 1960, *28*, ser. 4, 94-99, facsims.

Perkin, William Henry. William Henry Perkin 1860-1929. *Pharm. J.*, 1960, *184*, 4th Ser., *130*, 511.

Perrin, Henry E. Star Prairie will long remember its beloved Doctor Perrin. *Wisconsin M. J.*, 1960, *59*, 771-72, port.

Physick, Philip Syng. AGNEW, L. R. C. and SHELDON, G. F.: Philip Syng Physick (1768-1837), "the father of American surgery." *J. M. Educ.*, 1960, *35*, 541-49, port., illus.

Plass, E. D. BROWN, P. T.: E. D. Plass and J. H. Randall, and obstetrics and gynecology at the State University of Iowa 1926 to 1955. *J. Iowa M. Soc.*, 1960, *50*, 229-33.

Poe, Edgar Allan. BADOSA, A. O.: Edgar Allan Poe. Vida, genio y

adversidad. *An. Med.* (*Madrid*), 1960, *46*, 449-69.

Powers, Justin L. Dr. Justin L. Powers. *Am. J. Pharm.*, 1960, *132*, 312 & cover, port.

Poyen, Charles. CARLSON, E. T.: Charles Poyen brings mesmerism to America. *J. Hist. Med.*, 1960, *15*, 121-32.

Pugh, Herbert Lamont. PUGH, HERBERT LAMONT: *Navy surgeon.* Philadelphia: J. B. Lippincott Co., 1959, 459 pp.

Rafinesque, Constantine Samuel. B[EATTY], W. K.: Constantine Samuel Rafinesque. *News* (*M. Library, U. of Missouri*), 1960, *4* (7), 4-6.

——. See *Lawrence, G. K.*

Randall, J. H. See *Plass, E. D.*

Reutinger, Anna L. Anna L. Reutinger. *Am. J. Nursing*, 1960, *60*, 1588.

Rhoads, Cornelius Packard. HELLER, JOHN R.: Cornelius Packard Rhoads, leader in cancer research. *Science*, 1960, *131*, 486-87, port.

——. STOCK, C. CHESTER: Cornelius Packard Rhoads, 1898-1959. *Cancer Res.*, 1960, *20*, 409-11, port.

Roberts, Carl Glennis. Carl Glennis Roberts, M. D., 1866-1950. *J. Nat. M. A.*, (*N. Y.*), 1960, *52*, 146-47, port.

Robertson, Felix. WEAVER, T. S.: Dr. Felix Robertson: his life and times. *J. Tennessee M. A.*, 1960, *53*, 410-15.

Roddick, Thomas George. MACDERMOT, H. E.: History of Canadian surgery. Thomas George Roddick, 1846-1923. *Canad. J. Surgery*, 1960, *4* (1), 1-3, ports.

Rogers, L. H. ROGERS, L. H.: Medical memories of Berlin and Vienna. *Am.-Ger. Rev.*, 1959, *26* (1), 12-14.

Rollins, William Herbert. SWEET, A. P. S.: William Herbert Rollins, D.D.S., M. D., *Dent. Radiogr. & Photogr.*, 1960, *33*, 3-20.

Romayne, Nicholas. ROGERS, FRED B.: Nicholas Romayne, 1756-1817: stormy petrel of American medical education. *J. M. Educ.*, 1960, *35*, 258-63, port., illus.

Roosevelt, Franklin Delano. FABRICANT, N. D.: *Thirteen famous patients: F. D. Roosevelt, A. Hitler, M. Gandhi, W. Wilson, M. Proust, D. H. Lawrence, J. Joyce, F. Scott Fitzgerald, S. Freud, C. Darrow, P. Gauguin, G. Gershwin and E. Caruso.* London: C. Johnson, 1960.

Rush, Benjamin. DOUTY, E.: *Patriot doctor; the story of Benjamin Rush.* New York: Messner, 1959.

——. MEAD, S.: Essay on the art of the practice of medicine. *Kaiser Foundation M. Bull.*, 1959, *7*, 281-88.

——. MILLER, GENEVIEVE: Benjamin Rush's criticism of Hippocrates. *17 Congr. Int. Hist. Med.*, 1960, *1*, 128-32.

——. OVERHOLSER, W.: Note on Benjamin Rush. *Am. J. Psychiat.*, 1960, *116*, 937, illus.

——. SUSSEX, J. N.: Shades of Benjamin Rush! ["Psychopathy; or, spirit healing" published in 1890 by Mrs. Cora L. V. Richmond, Rush's medium.] *De Historia Medicinae* [Alabama], 1960, *4* (2), 17-18.

Sabin, Florence Rena. MCMASTER, P. D. and HEIDELBERGER, M.: Florence Rena Sabin. *Biogr. Mem. Nat. Acad. Sci.*, 1960, *34*, 271-319, port., bibliog.

St. Martin, Alexis. ROBILLARD, EUGÈNE: La Comité Alexis Bidagan dit St-Martin de la Société Canadienne de Physiologie. *Canad. Federation News*, 1960, *2* (January), 14-16.

Salk, Jonas. ROWLAND, J.: *The polio*

man: the story of Dr. Jonas Salk. London: Butterworth Press, 1960.

Saugrain, Antoine François de Vigni. WINKELMANN, J. P.: Missouri's first pharmacy [office and residence of Dr. Saugrain] St. Louis, 1800-1820. *Meyer Druggist*, 1959 (March), illus.

Seligman, Charles Gabriel. GLICK, L. B.: Charles Gabriel Seligman. *New England J. Med.*, 1960, *262*, 722-23.

Senn, Nicholas. BORNEMEIER, W. C.: Nicholas Senn, pioneer. *J. Internat. Coll. Surgeons*, 1959, *32*, 582-87, port.

——. KOONTZ, A. R.: Nicholas Senn, surgeon and soldier: a happy combination in military medicine. *Military Med.*, 1960, *125*, 203-6.

Shaw, Mary Edwards. Mary Edwards Shaw. *Am. J. Nursing*, 1960, *60*, 1588.

Sigerist, Henry Ernest. MARTI-IBÁÑEZ, F.: Sigerist y España. *Rev. Soc. Cub. Hist. Med.*, 1959, *2* (3), 26-32.

Sims, James Marion. CARMICHAEL, E. B.: J. Marion Sims: inventor, physician, surgeon. *J. Internat. Coll. Surgeons*, 1960, *33*, 757-62.

Sirch, Margaret Elliot Francis. TURNER, VIRGINIA A.: Margaret Elliot Francis Sirch [Editor of first permanent nursing magazine in the United States]. *Nursing World*, 1960, *134* (August), 11-13, ports., illus.

Smith, Ashbel. HOLMES, JACK D. L.: On the practicability and advantages of a first-class university in Memphis: a letter from Dr. Ashbel Smith in 1849. *Tennessee Hist. Quart.*, March 1960.

Smith, Martha R. Martha R. Smith. *Am. J. Nursing*, 1960, *60*, 1658.

Smith, Nathan. HAYWARD, O. S.: A search for the real Nathan Smith. *J. Hist. Med.*, 1960, *15*, 268-81, port., illus.

——. ——: Nathan Smith (1762-1829), politician. *New England J. Med.*, 1960, *263*, 1235-43, 1288-91, ports., illus.

Smith, Raymond C. WRONG, N. M. and FORSEY, R. ROY: Dr. Raymond C. Smith; an appreciation. *Canad. M. J.*, 1960, *82*, 1443-44.

Spohn, Peter. Dr. Peter Spohn. *Brit. Columbia M. J.*, 1960, *2*, 411-12.

Starr, Clarence Leslie. JANES, R. M.: History of Canadian surgery—Dr. Clarence Leslie Starr. *Canad. J. Surgery*, 1960, *3*, 109-11, port.

Sutton, Walter S. MCKUSICK, V. A.: Walter S. Sutton and the physical basis of Mendelism. *Bull. Hist. Med.*, 1960, *34*, 487-97, port.

Teeters, Wilbur J. KUEVER, R. A.: Dean Emeritus Wilbur J. Teeters, *Iowa Pharmacist*, 1960, *14* (12), 19, 21.

Thorek, Max. Dr. Max Thorek. *Rev. Soc. Cubana Hist. Med.*, 1960, *3* (1), 37-38, port.

Thornton, William. PAULSON, G. and R. B.: William Thornton [1759-1828]. *M. Ann. District of Columbia*, 1960, *29*, 34-36, 66.

Thrall, Seneca B. THRONE, MILDRED: An Iowa doctor in blue: the letters of Seneca B. Thrall. *Iowa J. Hist.*, April, 1960.

Tilton, James. ADAMS, T. R.: [Medical and political activities of Dr. James Tilton.] *Ann. Rep. John Carter Brown Library (Providence)*, 1959, 30-32.

Torrey, John. DUPREE, A. HUNTER and FISHEL, LESLIE H., JR.: An eyewitness account of the New York draft riots, July, 1863 [Dr. John Torrey to Asa Gray]. *Miss. Valley Hist. Rev.*, December 1960.

Tucker, David Andrew. SONDERVORST,

D. A.: David A. Tucker Jr. *Bull. Soc. Int. Hist. Méd.*, 1959, *6* (1-4), 30-31.

Urdang, George. DANN, G. E.: Obituary. *Gesch. Pharm.*, 1960, *12*, 17, port.

——. FOLCH JOU, G. George Urdang ha fallecido. *Bol. Soc. Esp. Hist. Farm.*, 1960, *11*, 177.

——. SCHNEIDER, W.: In memoriam George Urdang. *Arzneimittel-Forsch.*, 1960, *10*, 696-97.

——. SONNEDECKER, GLENN: George Urdang, as my teacher and colleague. *Pharmacy in History*, 1960, *5*, 20-21, port.

——. ——: George Urdang as my teacher and colleague. *Am. J. Hosp. Pharm.*, 1960, *17*, 508-9, port.

——. ——: George Urdang. *Am. J. Pharmaceut. Educ.*, 1960, *24*, 536-39.

——. ——: George Urdang, 1882-1960. *Isis*, 1960, *51*, 562-64.

——. UHL, A. H.: George Urdang, as known by his Dean. *Pharmacy in History*, 1960, *5*, 19-20.

——. WOLFE, H. GEORGE: George Urdang, 1882-1960: the man and his work. *Pharmacy in History*, 1960, *5*, 33-42, ports., illus.

——. First Director of Institute dies. George Urdang (1882-1960). *Pharmacy in History*, 1960, *5*, 17-19, illus.

——. George Urdang, 1882-1960. *J. Hist. Med.*, 1960, *15*, 427-28.

——. Le professeur Urdang. *Rev. Hist. Pharm. (Paris)*, 1960, *48*, 322.

Voegtlin, Carl. Carl Voegtlin, 1879-1960, first Director of Cancer Research of the Public Health Service and first Chief of the National Cancer Institute. *J. Nat. Cancer Inst.*, 1960, *25* (4), iii-xv, bust, bibliog.

Wald, Lillian D. ALGER, GEORGE W.: Lillian D. Wald. An artist in the joy of living. *Am. J. Nursing*, 1960, *60*, 354-57, illus.

——. See under *Addams, Jane.*

Walsh, James J. KIRWIN, H. W.: James J. Walsh—medical historian and pathfinder. *Catholic Hist. Rev.*, 1960, *45*, 409-35.

Warren, John Collins. MONSAINGEON, A.: Un américain à Paris. *Presse Méd.*, 1960, *68*, 295-96.

Washington, George. WEINBERGER, B. W.: Washington's missing dentures: solving the mystery. *J. A. D. A.*, 1960, *60*, 542-46.

Webster, John White. Harvard homicide. *MD M. Newsmag.*, 1960, *4* (3), 182-93, illus.

Wells, Horace. LITTLE, D. M.: [Introduction of anaesthesia into surgical procedures.] *Survey Anesth.*, 1960, *4*, 119-20.

——. SHARP, J.: Horace Wells, der Entdecker der Anästhesie. *Zahnärzt. Mitt.*, 1960, *51*, 318-21.

Weston, William. WESTON, WILLIAM: Memories of a busy life. *J. South Carolina M. A.*, 1960, *56*, 269-76.

Whitman, Marcus. Measles, doctor, Indians star in Oregon's history. *A. M. A. News*, 1959, Dec. 28, 13, illus.

Willinsky, Abraham. WILLINSKY, ABRAHAM: *A doctor's memoirs.* Toronto: Macmillan, 1960.

Wilson, Woodrow. GRAYSON, CARY TRAVERS: *Woodrow Wilson; an intimate study.* New York: Holt, Rinehart and Winston, 1960. [Grayson was his physician]

——. See *Roosevelt, Franklin Delano.*

Winternitz, Milton Charles. GREENE, HARRY S. N.: M. C. Winternitz, M. D., 1885-1959. *A. M. A. Arch. Path.*, 1960, *69*, 594-95, port.

——. MELLORS, ROBERT E.: M. C. Winternitz, M. D., 1885-1959. *Cancer*, 1960, *13*, 4, port.

——. WATERS, L. L.: Milton Charles Winternitz, pupil of William Henry Welch. *Science*, 1960, *131*, 1029-30, port.

Wirz, Henry. JACKSON, D.: Henry Wirz (1822-1865). *New England J. Med.*, 1960, *262* (1), 31-33, illus.

Wood, Isaac. Isaac Wood, M. D., 1793-1868. The Academy's fourth president. *Bull. New York Acad. Med.*, *36*, 632-34, 838-39, port.

Wyman, Rufus. CARLSON, ERIC T., and CHALE, MAY F.: Dr. Rufus Wyman of the McLean Asylum. *Am. J. Psychiatry*, 1960, *116*, 1034-37.

Zilboorg, Gregory. BRACELAND, F. J.: Gregory Zilboorg — a memorial 1891-1959. *Am. J. Psychiatry*, 1960, *116*, 671-72, port.

DENTISTRY

ASBELL, MILTON B.: Historical notes on dentistry in South Jersey. *Outlook Bull. Southern Dent. Soc.*, 1960, *29*.

ASGIS, A. J.: Historical pathways in American dentistry. *N. Y. Univ. J. Dentistry*, 1960, *18*, 19-26, 58-63, 100-5, *19*, 25-30.

BACON, EDGAR S.: *The New York Academy of Dentistry: its first thirty-five years.* New York: New York Academy of Dentistry, 1960, 257 pp.

BLACK, F. W.: see *Callahan, John R.*, under BIOGRAPHY.

COHN, E.: Die Zahnheilkunde im vorkolonialen Amerika. *Zahnmed. im Bild*, 1960, *1*, 92-93.

COOLIDGE, EDGAR D.: Past and present concepts in endodontics. *J. A. D. A.*, 1960, *61*, 676-88.

DENTON, G. B.: Craftsman and the dentist: from cutter to dental manufacturer. *J. Am. Coll. Dentists*, 1960, *27*, 195-200.

——: Some interrelations between German and American dentistry, 1800-1914. *J. A. D. A.*, 1960, *61*, 587-98. *Dtsch. Zahnärztl. Z.*, 1959, *14*, 1196-1207. [German]

ENMS, L. M.: The highlights of American dentistry in the field of roentgenology. *Internat. Dent. J.*, 1960, *2*, 139-53.

GURLEY, J. E.: *The evolution of dental education* [in America]. Fulton, Mo.: Ovid Bell Press, 1960.

HAINES, HELEN STEERE and THOBURN, ROBERT: *75 years of dentistry. History of dentistry in Florida for the past 75 years.* Gainesville, Fla.: University of Florida Press, 1960, 418 pp., illus.

KAPLAN, J. G.: Two hundred years of evolution: a dialectical history. *J. Canad. Dent. A.*, 1960, *26*, 117-26.

KAUFFMANN, JOSEPH H., ed.: Centennial of the First District Dental Society of New York 1860-1960. *J. First District Dent. Soc.*, 1960, special volume, 43 & v pp.

KHALIFAH, ELIAS S.: see *Lischer, Benno*, under BIOGRAPHY [Dental education].

MCCLUGGAGE, R. W.: Profession, ethics and history. *J. Dent. Educ.*, 1960, *24*, 171-75.

MCDERMOTT, J. F.: see *Brown, B. B.* under BIOGRAPHY.

PAYNTER, K. J.: The growth of dental research in Canada. *J. Canad. Dent. A.*, 1960, *26*, 417-18.

PROSKAUER, CURT: Two dental advertisements on mock-bills. *J. Hist. Med.*, 1960, *15*, 408-16, illus.

——: see *Loomis, Mahlon*, under BIOGRAPHY.

SELDIN, J. B.: Dental education: a historical survey. *New York Dent. J.*, 1960, *30*, 327-29.

SHANKLAND, W. N.: Missouri State Dental Association 1865—a prelude

to organization. *J. Missouri Dent. A.*, 1960, *40*, 9-28.

SPRAU, R. L. and GERNERT, E. B.: *History of Kentucky dentistry*, 1960, 168 pp.

STEPHENS, R. R.: Development of the dental drill. *Dent. Abstracts*, 1960, *5*, 633-34.

SWEET, A. P. S.: see *Forbes, Isaiah; Hudson, Edward; Greenwood, John;* and *Rollins, William Herbert*, under BIOGRAPHY.

TABER, LOREN B.: A period in California's dental education and 'politicking' from ante 1885 to circa 1906. *J. Calif. Dent. A. & Nevada Dent. Soc.*, 1960, *36*, 103-8.

WARNER, R. M.: *History of the Michigan State Dental Association*, 1960.

WEINBERGER, B. W.: see *Washington, George*, under BIOGRAPHY [Washington's missing dentures].

Dean Cogan and the History of the School of Dentistry [Georgetown Univ.]. *Georgetown Dent. J.*, 1959, *25*, 16-17.

Dental inventions of yesteryear. *Dent. Students Mag.*, 1960, *38*, 16-17.

History of dentistry in Kentucky. *J. Kentucky Dent. A.*, 1960, *12*, 55-69.

William Herbert Rollins. See under BIOGRAPHY.

E. N. Stout. See under BIOGRAPHY [Early Texas peripatetic dentist].

DISEASES

ANDERSON, D. M.: History of celiac disease. *J. Am. Diet. A.*, 1959, *35*, 1158-62.

BLOOMFIELD, A. L.: *A bibliography of internal medicine: selected diseases.* Chicago: University of Chicago Press, 1960.

BLUEMEL, C. S.: Concepts of stammering: a century in review. *J. Speech Dis.*, 1960, *25*, 24-32.

BLUMBERG, B. S.: The history of arthritis and rheumatism. *Arth. & Rheum.*, 1960, *3*, 421-22.

BROWN, V. P. and NABERS, J. P.: The beginnings of the anti-tuberculosis movement in Alabama. *De Historia Medicinae* [Alabama], 1960, *4* (2), 4-10.

——: Pioneer crusaders against tuberculosis in Jefferson County [Alabama]. *De Historia Medicinae* [Alabama], 1960, *4* (July), 7-17, ports.

CLOWES, G. H. A., JR.: The historical development of the surgical treatment of heart disease. *Bull. Hist. Med.*, 1960, *34*, 29-51.

DILLENBERG, H. O. and DEHNEL, M. K.: Toxic waterbloom in Saskatchewan, 1959. *Canad. M. A. J.*, 1960, *83*, 1151-54.

FEIL, H.: History of the treatment of heart disease in the nineteenth century. *Bull. Hist. Med.*, 1960, *34*, 19-28.

FENJE, PAUL and AMIES, C. R.: The problem of rabies in Canada. *Canad. M. A. J.*, 1960, *82*, 143-45.

FRENCH, J. D. and DARLING, L.: see *Billings, John Shaw*, under BIOGRAPHY [Surgical treatment of epilepsy in 1861].

GLENN, F.: see *Cushing, Harvey*, under BIOGRAPHY [Cushing's syndrome].

GREGSON, J. D.: Tick-transmitted diseases in British Columbia. *Modern Med. Canad.*, 1960, *15*, 152, 155.

HARSTAD, PETER T.: Disease and sickness on the Wisconsin frontier: Cholera. *Wisconsin Mag. Hist.*, Spring 1960.

——: Disease and sickness on the Wisconsin frontier: Malaria, 1820-1850. *Wisconsin Mag. Hist.*, Winter 1959-60.

——: Disease and sickness on the Wisconsin frontier: Smallpox and other

diseases. *Wisconsin Mag. Hist.*, Summer 1960.

HELLER, JOHN R.: see *Rhoads, Cornelius Packard*, under BIOGRAPHY [Cancer research].

IVY, R. H.: The influenza epidemic of 1918. Personal experience of a medical officer in World War I. *Military Med.*, 1960, *125*, 620-22.

KLEMPERER, P.: The history of coronary sclerosis. *Am. J. Cardiology*, 1960, *5*, 94-107, illus.

KOPROWSKI, H.: Historical aspects of the development of live virus vaccines in poliomyelitis. *Tr. & Stud. Coll. Phys. Philad.*, 1960, *27*, 95-106. *Schweiz. Med. Wchnschr.*, 1959, *89*, 1323 [German]. *Brit. M. J.*, 1960, ii, 85-91. *Am. J. Dis. Child.*, 1960, *100*, 428-39.

KOWAL, S. J.: Emotions and angina pectoris. An historical review. *Am. J. Cardiology*, 1960, *5*, 421-27.

KRAMER, B. and KANOF, A.: Diarrhea in children: a historical review. *J. Pediat.*, 1960, *57*, 769-83.

MCKUSICK, V. A.: The history of methods for the diagnosis of heart disease. *Bull. Hist. Med.*, 1960, *34*, 16-18.

MCLEAN, D. M.; KRAUSE, V. W.; WILSON, W. M.; HAWKE, W. A.: Rabies following skunk bite [Canada]. *Canad. M. A. J.*, 1960, *82*, 315-17.

MCNEEL, B. H. and LEWIS, C. H.: Care of the mentally ill in Ontario; history of treatment. *Canad. Hosp.*, 1960, *37*, no. 2, 34-36, 102; no. 3, 48, 106-7.

MARTIN, J. K.: Cerebral palsy in Manitoba. *Canad. M. A. J.*, 1960, *82*, 411-17.

MURPHY, ARTHUR L.: The anti-scurvy club, 1606 A.D. [Life and régime of early settlers in Nova Scotia]. *Canad. M. A. J.*, 1960, *82*, 541-43.

NAYLOR, B.: The history of exfoliate cancer cytology. *U. Michigan M. Bull.*, 1960, *26*, 289-96.

PARTIN, ROBERT: see *Cochran, Jerome*, under BIOGRAPHY [Yellow fever fighter].

RADBILL, SAMUEL X. and HAMILTON, GLORIA R.: Measles in fact and fancy. *Bull. Hist. Med.*, 1960, *34*, 430-42.

ROSENBERG, C.: The cause of cholera: aspects of etiological thought in nineteenth century America. *Bull. Hist. Med.*, 1960, *34*, 331-54.

ROWLAND, J.: see *Salk, Jonas*, under BIOGRAPHY [Poliomyelitis].

SATTERLEE, H. S.: The arsenic-poisoning epidemic of 1900. Its relation to lung cancer in 1960—an exercise in retrospective epidemiology. *New England J. Med.*, 1960, *263*, 676-84.

SMITH, H. L.: Historical notes on parenteral fluid therapy of diarrhoea in infants. *J. Pediat.*, 1960, *57*, 611-16.

SMITH, H. R.: *The conquest of bovine tuberculosis in the United States.* 2 ed. Somerset, Michigan: priv. print, 1959.

SMITH, T. H. F.: A chronology of atherosclerosis. *Am. J. Pharm.*, 1960, *132*, 390-405.

TURNER, U.: Asthma caused by ipecacuanha. Historical document. [Repr. from the *Boston M. Surg. J.*, 1843, *29* (12)] *Ann. Allergy*, 1960, *18*, 190-93.

UNGER, L.: The history of allergy. *J. Internat. Coll. Surgeons*, 1960, *34* (pt. 1), 536-46.

WAKSMAN, SELMAN A.: Puritan and pestilence. *Physician's Bull.*, 1960, *5*, 108-10.

David Herbert Lawrence. See under BIOGRAPHY [Famous TB's in history].

GENERAL

BEAN, W. B.: A critique of criticism in medicine and the biological sciences in 1958. *Perspect. Biol. Med.*, 1958, *1*, 224-32.

——: The natural history of error. *A. M. A. Arch. Intern. Med.*, 1960, *105*, 184-93.

BENISON, SAUL: Oral history: living moments of modern medicine. *Bull. New York Acad. M.*, 1960, *36*, 344-49.

CORCORAN, A. C.: Medicine in literature. *Bull. Cleveland Med. Library*, 1960, *7*, 63-69, port. [O. W. Holmes].

GARRISON, F. H.: *An introduction to the history of medicine, with medical chronology, suggestions for study and bibliographic data.* 4 ed. (1929). Philadelphia: Saunders, repr. 1960.

GEBHARD, B.: The patient—the forgotten man in the history of medicine. *Bull. Acad. Med. Cleveland*, 1960, *45* (8), 5-7, 32.

GENOVESE, EUGENE D.: The medical and insurance costs of slaveholding in the cotton belt. *J. Negro Hist.*, 1960 (July).

HAFFNER, GERALD O. and WILSON, WILLIAM E.: The medical inventory of a pioneer doctor. *Indiana Mag. Hist.*, March 1960.

KNISELY, M. H.: Stories about doctors. *J. South Carolina M. A.*, 1960, *56*, 521-27.

MILLER, GENEVIEVE, Ed.: Bibliography of the history of medicine of the United States and Canada 1959. *Bull. Hist. Med.*, 1960, *34*, 529-65.

ORR, L. M.: Die Lage des ärztlichen Berufsstandes in den Vereinigten Staaten von Nordamerika. *Schweiz. Ärztezig.*, 1960, *41*, 252-55.

RODIN, A. E.: The influence of biography on medical fame. *Canad. M. A. J.*, 1960, *83*, 1382-83.

SHRYOCK, RICHARD H.: *Medicine and society in America, 1660-1860.* New York: N. Y. University Press, 1960, 182 pp.

——: [Relations between medicine and society in the nineteenth century.] *Cah. Hist. Mond.*, 1959, *5*, 116-46.

STEVENSON, L. G.: Medicine in the nineteenth century—with special reference to the United States. *Yale J. Biol. Med.*, 1960, *33*, 159-68.

TWISS, J. R.: Medical practice in Colonial America. *Bull. N. Y. Acad. Med.*, 1960, *36*, 538-51.

VIETS, HENRY R.: *Medical history, humanism, and the student of medicine.* Hanover, N. H.: Dartmouth Publications, 1960, 32 pp., ports.

WILLIAMS, R. C.: Fifty years of medicine in retrospect. *J. M. A. Alabama*, 1960, *30*, 71-77.

Medicine on postage stamps. [Editorial.] *Illinois M. J.*, 1960, *117* (1), 37-38.

The value of medical history. *J. Nat. M. A.*, (*N. Y.*), 1960, *52*, 365-66.

HOSPITALS

CARLSON, ERIC T. and CHALE, MAY F.: see *Wyman, Rufus*, under BIOGRAPH [McLean Asylum].

CUMMINGS, G. O.: Maine General Hospital: an historical sketch. *J. Maine M. A.*, 1960, *51*, 267-72, 279.

DAIN, N. and CARLSON, E. T.: Milieu therapy in the nineteenth century: patient care at the Friends' Asylum, Frankford, Pennsylvania, 1817-1861. *J. Nerv. Ment. Dis.*, 1960, *131*, 277-90.

ENTIN, MARTIN: Montreal's "Old Vic." [Royal Victoria Hospital]. *McGill News*, 1960, *41*, 17-18, ports., illus.

GARLAND, JOSEPH E.: *An experiment in*

medicine. The first twenty years of the Pratt Clinic and the New England Center Hospital of Boston. Cambridge, Mass.: Riverside Press, 1960, ix, 107 pp.

GUESS, J. DECHERD: The Greenville County Medical Society historical sketches. Greenville's hospitals. *J. South Carolina M. A.*, 1960, *56*, 65-69.

HUNT, T. MORGAN: La fondation de l'Hôtel Dieu de Québec. *Laënnec Méd.*, 1960, *11*, 12-17.

KEYS, THOMAS E.: see *Osler, William*, under BIOGRAPHY [Osler and the Mayo Clinic].

LUCKEY, V. M.: The first rural public hospital. [Washington County Hospital, Iowa.] *J. Iowa M. Soc.*, 1960, *50*, 165-66.

MCGUGAN, ANGUS C.: Gleanings from history. *Canad. Hosp.*, 1960, *37*, 33, 74.

——: Hospitals and hospital administration then and now. [Edmonton, Alberta]. *Alberta M. Bull.*, 1960, *25*, 99-106, illus.

OLCOTT, C. T.: Pathology at the New York Hospital, 1810-1932. *Bull. Hist. Med.*, 1960, *34*, 137-47, port.

PAINTON, J. F.: History and development of the Millard Fillmore Research Institute. *Bull. Millard Fillmore Hosp.*, 1960, *7*, 16-23.

PARKER, F.: see *Hopkins, Johns*, under BIOGRAPHY [Johns Hopkins Hospital].

PECKHAM, ARTHUR H., JR.: The Kootenay Lake General; a reason for pride. *Canad. Hosp.*, 1960, *37*, 36-41, 82.

RADMAN, H. M.: An end of an era. [75th anniversary of the Sinai Hospital, Baltimore.] *Sinai Hosp. J.*, 1960, *9*, 141-45.

SAUCIER, JEAN: Montreal neurology. [Montreal Neurological Institute] *Canad. M. A. J.*, 1960, *82*, 892-94.

STOOKEY, B.: The Neurological Institute and early neurosurgery in New York. *J. Neurosurg.*, 1960, *17*, 801-14, facsims.

ZUGICH, JOHN J.: see under PHARMACY [Hospital pharmacy in review].

The golden jubilee of the Philippine General Hospital. *Philippine J. Surgery*, 1960, *15*, 238.

Hospitals—yesterday and today. *Nursing Outlook*, 1960, *8*, 260-61, illus.

Medical embassy. Story of the American Hospital in Paris. *MD M. Newsmag.*, 1960, *4* (4), 134-41, illus.

JOURNALS

BENSLEY, E. H.: Canadians should publish in Canadian journals. *Canad. M. A. J.*, 1960, *83*, 1163.

LEBHAR, GODFREY M.: The 35-year story of *Chain Store Age*. *Chain Store Age*, 1960, *36* (8), 60-78, ports.

LOSACCO, C. L.: The Philadelphia Journal of the Medical and Physical Sciences 1820-1827. *Bull. Hist. Med.*, 1960, *34*, 75-79.

MITCHELL, R.: see Hamilton, T. Glen, under BIOGRAPHY [Founder of the *Manitoba Medical Review*].

TURNER, VIRGINIA A.: see *Sirch, Margaret E. F.*, under BIOGRAPHY [Editor of first permanent nursing magazine in the U. S.].

Arthur F. Coca, founder of the Journal of Immunology. See under BIOGRAPHY.

LIBRARIES—MUSEUMS

CAVANAGH, G. S. T.: see *Clendening, Logan*, under BIOGRAPHY [The Clendening Collection at the University of Kansas Medical Library].

COLBY, C. C., III, and ESTERQUEST, R.

T.: The Francis A. Countway Library of Medicine, Harvard Medical Library—Boston Medical Library. *Bull. M. Library A.*, 1960, *48*, 121-24.

FARRIS, B. R.: The Charles F. and Olga C. Moon collection of obstetrics and gynecology in the University of Nebraska College of Medicine Library. [Introduction by C. F. Moon.] *Bull. M. Library A.*, 1960, *48*, 243-77, illus.

FRASER, M. D. E.: Canadian medical school libraries and their collections; a brief review. *Bull. M. Library A.*, 1960, *48*, 149-61.

GEBHARD, BRUNO: The Cleveland Health Museum comes of age. *Canad. J. Pub. Health*, 1960, *51* (February), 43-48.

HENKLE, H. H.: The physician as book collector. Notes on famous libraries. *J. Internat. Coll. Surgeons*, 1960, Sect. 1, *34* (1), 107-17.

HERNDON, T.: Bernard Gordon manuscripts in the United States. *Bull. Hist. Med.*, 1960, *34*, 80-81.

KILGOUR, FREDERICK G.: *The Library of the Medical Institution of Yale College and its catalogue of 1865.* New Haven: Yale University Press, 1960, 74 pp.

LANIER, E. B.: Historical collections within the Lawrence Reynolds Library. Electricity and magnetism. *De Historia Medicinae* [*Alabama*], 1960, *4* (1), 27-30.

—— and THOMAS, M. L.: see *Holmes, Oliver Wendell*, under BIOGRAPHY [Holmes collection in the Lawrence Reynolds Library, Birmingham, Ala.].

MARKLE, M. S. and COPE, J. B.: A history of the Joseph Moore Museum at Earlham College. *Proc. Indiana Acad. Science*, 1958, *68*, 311-15.

NATIONAL LIBRARY OF MEDICINE, WASHINGTON: *Medical portraits: a preliminary check list.* Compiled by C. E. Morrison and S. M. Parker. Washington: U. S. Dept. of Health, Education & Welfare, 1960.

NEW YORK ACADEMY OF MEDICINE: *Catalog of biographies in the Library of the New York Academy of Medicine.* Boston: G. K. Hall, 1960.

POSTELL, WILLIAM DOSITE: Rudolph Matas Medical Library. An opportunity for service. *Bull. Tulane M. Faculty*, 1960, *19*, 99-105.

QUINBY, J.: *Catalogue of botanical books in the collection of Rachel McMasters Miller Hunt.* Vol. I. Printed books 1477-1700. Pittsburgh: Hunt Botanical Library, 1958.

WADE, E. N.: Supplemental catalogue of medical medals, badges and coins in the College of Physicians of Philadelphia. *Tr. & Stud. Coll. Phys. Philad.*, 1960, ser. 4, *27*, 161-87.

WRIGHT, M. H.: Southern Asian materials in the National Library of Medicine. *Bull. M. Library A.*, 1960, *48*, 142-48.

A catalogue of the H. Winnett Orr Historical Collection and other rare books in the library of the American College of Surgeons. Chicago: American College of Surgeons, 1960, xxi, 198 pp., illus.

Dr. Montague presents proctologic library and museum to Hall of Fame. See *Montague, Joseph Franklin*, under BIOGRAPHY.

The "Ether Painting." [A gift to the R. C. S. Library of photographs of the original records of the first operation performed under ether, and of a coloured reproduction of the "Ether Painting" at the Boston

Medical Library.] *Ann. Royal Coll. Surgeons England*, 1960, *27* (1), 71.

Five centuries of veterinary medicine. [The Veterinary Historical Library. Michigan State University.] *Michigan St. Univ. Mag.*, 1957, *2* (18), 10-13, illus.

The Francis A. Countway Library of Medicine. *Harvard Library Bull.*, 1960, *14*, 307-8.

More acquisitions ready for Medical History Center [Prairie du Chien, Wis.]. *Wisconsin M. J.*, 1960, *59*, 456, illus.

Harry M. Lydenberg. See under BIOGRAPHY.

Oliver Wendell Holmes collection in University of Virginia Library. See under BIOGRAPHY.

LOCAL HISTORY AND SOCIETIES

Alabama

BROWN, V. P. and NABERS, J. P.: see under DISEASES [Pioneer crusaders against tuberculosis in Jefferson County, Ala.].

HOLLEY, H. L.: Early history of medicine in Jefferson County, Alabama. *De Historia Medicinae* [Alabama], 1960, *4* (2), 11-14.

LANIER, E. B.: see under LIBRARIES—MUSEUMS [Lawrence Reynolds Library at University of Alabama Medical Center].

WILLIAMS, R. C.: Fifty years of medicine in retrospect. *J. M. A. Alabama*, 1960, *30*, 71-77.

Arizona

LEE, J. G.: see under PRIMITIVE MEDICINE [Papago Indian medicine].

SNIVELY, W. D., JR.: Medical practice a century ago. *Arizona Med.*, 1960, *17*, 452-57.

WATKINS, W. W.: Humor and pathos of physician's practice in a Mexican mining camp. [Reprinted from *Arizona Gazette*, Phoenix, Oct. 2, 1907.] *Arizona Med.*, 1960, *17*, 546-49.

California

BAUR, JOHN E.: *The health seekers of southern California, 1870-1900.* [Huntington Library Publications.] San Marino, Calif.: The Library, 1959, xiii, 202 pp.

TABER, LOREN B.: see under DENTISTRY [California's dental education 1885-1906].

Canada

AMYOT, ROMA: Revue rapide des événements qui ont conduit vers l'institution du conseil médical du Canada accordant la licence fédérale. *L'Union Méd. Canad.*, 1960, *89*, 633-35.

BENSLEY, E. H.: see under JOURNALS [Canadians should publish in Canadian journals].

BOISSONNAULT, CHARLES MARIE: Au temps de Champlain. Ripailles au chevet des malades. *Laval Méd.*, 1960, *30*, 629-32.

DROLET, ANTONIO: Le médecin dans le roman canadien-français. *Laval Méd.*, 1960, *29*, 220-31.

FENJE, PAUL and AMIES, C. R.: see under DISEASES [Rabies in Canada].

FRASER, M. D. E.: see under LIBRARIES-MUSEUMS [Canadian medical school libraries].

HARRISON, H. M.: The end of an era. [The closing of the Canadian Medical Institute.] *Canad. M. A. J.*, 1960, *82*, 1166-67.

HILDES, J. A.: see under PUBLIC HEALTH AND SOCIAL MEDICINE [Health problems in the Arctic].

HUGHES, F. N.: see under PHARMACY [Graduate study and the Canadian research conference].

KELLY, A. D.: see under PUBLIC HEALTH AND SOCIAL MEDICINE [Health insurance in New France].

KENNEDY, W. P.: Medicine in Canada. *St. Mary's Hosp. Gaz.*, 1960, *66*, 189-93, illus.

LAPOINTE, DONAT: see under PUBLIC HEALTH AND SOCIAL MEDICINE [Paediatric pathology in the Latin population of Canada in the last 20 years].

LEYS, JAMES FARQUHARSON: see *McKenzie, Robert Tait,* under BIOGRAPHY [Physical fitness shrine in Canada].

LYON, E. KIRK: Valedictory address [Work carried on during 1960 by the Canadian Medical Association]. *Canad. M. A. J.*, 1960, *83*, 167-69.

MCLEAN, D. M.; KRAUSE, V. W.; WILSON, W. M.; HAWKE, W. A.; see under DISEASES [Rabies following skunk bite in Canada].

MEDCOF, J. C.: Shellfish poisoning—another North-American ghost. [Bay of Fundy region.] *Canad. M. A. J.*, 1960, *82*, 87-90, illus.

PATERSON, G. R.: see under PHARMACY [The Canadian formulary].

PAYNTER, K. J.: see under DENTISTRY [Growth of dental research in Canada].

PECKHAM, ARTHUR H., JR.: see under HOSPITALS [Kootenay Lake General Hospital, Canada].

SEGALL, HAROLD N.: Histoire de la Société Canadienne de Cardiologie. *L'Union Méd. Canad.*, 1960, *89*, 82-85.

STEWART, C. B.: see under MEDICAL EDUCATION [Teaching of preventive medicine in Canada].

SUMMERS, J. L.: see under PHARMACY [Hospital pharmacy in Canada in the sixties].

THOMPSON, J. S.: see under MEDICAL EDUCATION [Canadian medical education—its costs and personnel].

The 25,000-mile hand [Canadian laboratories]. See under MEDICAL SCIENCE AND SPECIALTIES.

Thomas George Roddick. See under BIOGRAPHY [Canadian surgery].

Canada, Alberta

MCGUGAN, ANGUS C.: see under HOSPITALS.

Canada, British Columbia

GREGSON, J. D.: see under DISEASES [Tick-transmitted diseases in British Columbia].

WILSON, WALLACE A.: see under PUBLIC HEALTH AND SOCIAL MEDICINE [Health insurance in British Columbia in the 1930s].

Canada, Manitoba

GORDON, A.: A case history from the spacious days. *Manitoba M. Rev.*, 1960, *40*, 301-3.

MARTIN, J. K.: see under DISEASES [Cerebral palsy in Manitoba].

MITCHELL, Ross: see *Kerr, James,* under BIOGRAPHY [Manitoba surgical pioneers].

Canada, New Brunswick

BIRD, H. A. and MELANSON, J. A.: see under PUBLIC HEALTH AND SOCIAL MEDICINE [Laboratory services in New Brunswick].

Canada, Nova Scotia

MURPHY, ARTHUR L.: see under DISEASES [Early settlers in Nova Scotia and scurvy].

Canada, Ontario

GLADSTONE, RICHARD M.: The Academy of Medicine, Toronto. *Univ. of Toronto M. J.*, 1960, *37*, 92-94.

MCNEEL, B. H. and LEWIS, C. H.: see under DISEASES [Care of the mentally ill in Ontario].

ROBSON, R. B.: Medical economics; Windsor Medical Services Incorporated. [Windsor, Ontario]. *Canad. M. A. J.*, 1960, *82*, 604-7.

Canada, Quebec

BARKER, BURT BROWN: see *McLoughlin, John*, under BIOGRAPHY [McLoughlin empire in Quebec].

BOISSONNAULT, C.-M.: Au temps de Champlain. Ripailles au chevet des malades. *Laval Méd.*, 1960, *30*, 629-32.

ELLIOT, J. M.: The early English surgeons of Quebec. *Laval Méd.*, 1960, *30* (1), 78-84.

ENTIN, MARTIN: see under HOSPITALS [Royal Victoria Hospital, Montreal].

HANAWAY, J.: see under MEDICAL EDUCATION [Coat-of-arms of McGill University Faculty of Medicine].

HUNT, T. MORGAN: see under HOSPITALS [l'Hôtel Dieu de Québec].

NEUFELD, A. H.: Medical societies: Montreal physiological society. *Canad. M. A. J.*, 1960, *82*, 38-40.

SAUCIER, JEAN: see under HOSPITALS [Montreal Neurological Institute].

Medicine at McGill. *McGill News*, 1960, *41*, 1-40, ports., illus.

Canada, Saskatchewan

DILLENBERG, H. O. and DEHNEL, M. K.: see under DISEASES [Toxic waterbloom in Saskatchewan, 1959].

Connecticut

BELL, WHITFIELD J., JR.: see under MEDICAL EDUCATION [Medical Institution of Yale College, 1810-1885].

KILGOUR, FREDERICK G.: see under LIBRARIES-MUSEUMS [Library of the Medical Institution of Yale College].

LIEBOW, A. A.: see under MEDICAL EDUCATION [Medical research at Yale in twentieth century].

LIPPARD, V. W.: see under MEDICAL EDUCATION [Yale School of Medicine in the twentieth century].

THOMS, HERBERT: see under MEDICAL EDUCATION [Founding of Yale Medical School].

THOMSON, E. H.: see under MEDICAL EDUCATION [History of science and medicine department at Yale].

District of Columbia

KOPPANYI, T.: see under MEDICAL EDUCATION [Georgetown Medical School].

O[verholser], W[infred]: On medical statuary [in Washington, D. C.]. *M. Ann. District of Columbia*, 1960, *29*, 42-43.

PARKS, JOHN: see under MEDICAL EDUCATION [George Washington University School of Medicine].

School of Dentistry, Georgetown University. See under DENTISTRY.

Florida

HAINES, HELEN S. and THOBURN, ROBERT: see under DENTISTRY [75 year anniversary of Florida State Dental Society].

Georgia

WILSON, ROBERT CUMMING: see under PHARMACY [Drugs and pharmacy in Georgia, 1733-1959].

Hawaii

STRODE, J. E.: see under MEDICAL SCIENCE AND SPECIALTIES [Surgery in Hawaii, 1916-1960].

WILSON, M.: Hawaii—rich in lore of medicinal herbs. *J. Indiana M. A.*, 1960, *53*, 1206-11, illus.

Gerrit P. Judd. See under BIOGRAPHY.

Illinois

YOUNG, R. H.: see under MEDICAL EDUCATION [Northwestern University Medical School].

Indiana

INLOW, WILLIAM DEPREZ: The Indiana physician as geologist and naturalist. *Indiana Mag. Hist.*, 1960, *56*, 1-35, ports.

Iowa

BROWN, P. T.: see *Plass, E. D.*, under BIOGRAPHY [Obstetrics and gynecology at State University of Iowa 1926-1955].

HENNESSY, FELIX A.: Some reminiscences of a northeast Iowa doctor. *J. Iowa M. Soc.*, 1960, *50*, 54-58.

LUCKEY, V. M.: see under HOSPITALS [Washington County Hospital, Iowa].

O'NEAL, H. E. and KLITH, V. Y.: 120 years of the medical profession in Cedar County, Iowa. *J. Iowa M. Soc.*, 1960, *50*, 581-86, 645-50, 687-94, 761-69, illus.

Kentucky

SPRAU, R. L. and GERNERT, E. B.: see under DENTISTRY [History of Kentucky dentistry].

History of dentistry in Kentucky [See under DENTISTRY]

Louisiana

DUFFY, J.: Vagrant thoughts on the writing of the Rudolph Matas History of Medicine in Louisiana. *Bull. Tulane M. Fac.*, 1960, *19*, 123-33.

Maine

CUMMINGS, G. O.: see under HOSPITALS [Maine General Hospital].

TROWBRIDGE, M. and others: 125 years of Bangor medicine. *J. Maine M. A.*, 1959, *50*, 441-46, illus.

Maryland

COLE, B. OLIVE: see under PHARMACY [Early pharmacy in Maryland].

RADMAN, H. M.: see under HOSPITALS [75th anniversary of Sinai Hospital, Baltimore].

WAGNER, J. A.: see under MEDICAL SCIENCE AND SPECIALTIES [19th century pathologists and the development of pathology in Maryland].

Massachusetts

COLBY, C. C., III, and ESTERQUEST, R. T.: see under LIBRARIES-MUSEUMS [The Francis A. Countway Library of Medicine, Harvard Medical Library—Boston Medical Library.]

GARLAND, JOSEPH E.: see under HOSPITALS [Pratt Clinic and New England Center Hospital of Boston].

KUBIE, LAWRENCE S.: *The Riggs story. The history of the Austen Riggs Foundation in Stockbridge, Mass.* New York, 1960, 216 pp.

Harvard Medical School in 1788-89. See *La Terrière, Pierre de Sales*, under BIOGRAPHY.

Michigan

WARNER, R. M.: see under DENTISTRY [History of Michigan State Dental Association].

Minnesota

DRAKE, C. B.: The Minnesota Academy of Medicine. An historical account. *Minnesota Med.*, 1960, *43*, 244-50.

EDDY, J., HALL, G., ARNESON, A. I., and ROSENTHAL, R.: Pioneer physicians of Stevens County, Minnesota. [continued from Oct., 1959]. *Minnesota Med.*, 1960, *43*, 70-77, 290-95.

GRAY, JAMES: see under NURSING [University of Minnesota Nursing School].

GUTHREY, N. H.: Medicine and its practitioners in Mower County prior to 1900. *Minnesota Med.*, 1960, *43*, 515-22, 702-16, 767-81, 850-67.

WALTERS, WALTMAN: A surgeon's progress. *Minnesota Med.*, 1960, *43*, 385-91.

Missouri

MCDERMOTT, J. F.: see *Brown, B. B.*, under BIOGRAPHY [Dr. Brown's St. Louis].

MAJOR, R. H.: see *Hammer, Adam*, under BIOGRAPHY [A German medical academy in St. Louis].

POTTER, R. and HOFMANN, J.: see under NURSING [School of Nursing at University of Missouri].

SHANKLAND, W. N.: see under DENTISTRY [Missouri State Dental Association 1865].

WILSON, V. E.: see under MEDICAL EDUCATION [University of Missouri School of Medicine].

WINKELMANN, J. P.: see *Saugrain, Antoine*, under BIOGRAPHY [Missouri's first pharmacy].

New Jersey

ASBELL, MILTON B.: see under DENTISTRY [Historical notes on dentistry in South Jersey].

ROGERS, FRED B.: *Help-bringers: versatile physicians of New Jersey.* New York: Vantage Press, 1960.

——: The Medical Society of New Jersey since 1766. *New Jersey Newsletter*, 1959 (November), 1, 4.

New York

BACON, EDGAR S.: see under DENTISTRY [New York Academy of Dentistry].

CLEMMER, JOHN J.: see under PUBLIC HEALTH AND SOCIAL MEDICINE [Public health laboratory system in New York State].

GOODWIN, EVELYN: see under MEDICAL EDUCATION [History of medical education in Brooklyn, 1860-1960.]

KAUFFMANN, JOSEPH H., ed.: see under DENTISTRY [Centennial of the First District Dental Society of New York 1860-1960].

LEMIR, R. L. and others: History of the Women's Medical Association of New York City (Branch Fourteen): 1909-1959. *J. A. M. Women's A.*, 1960, *15*, 781-82, ports.

OLCOTT, C. T.: see under HOSPITALS [Pathology at the New York Hospital, 1810-1932].

PAINTON, J. F.: see under HOSPITALS [Millard Fillmore Research Institute, Buffalo, N. Y.].

STOOKEY, B.: see under HOSPITALS [Neurological Institute, N. Y.].

History of the Long Island College Hospital, Long Island College of Medicine, and the State University of New York College of Medicine at New York City. See under MEDICAL EDUCATION.

New York Medical College centenary. See under MEDICAL EDUCATION.

Ohio

FORMAN, JONATHAN: Pioneer medicine in Franklin County [Ohio]. *Land-*

marks [Franklin Co. Hist. Soc.], 1960, *1* (2), 3 pp.; (3), 4 pp.

——: see under PRIMITIVE MEDICINE [Indian medicine in Central Ohio].

GEBHARD, BRUNO: see under LIBRARIES-MUSEUMS [Cleveland Health Museum].

HUFFMAN, W. S.: Health in frontier northwest Ohio. *Ohio M. J.*, 1960, *56*, 1338-40.

WAITE, FREDERICK C.: see under MEDICAL EDUCATION [Western Reserve University School of Medicine].

History of the Women's Auxiliary to the Academy of Medicine of Toledo and Lucas County. *Bull. Acad. Med. Toledo & Lucas County*, 1960, *46* (9), 23.

Merrell of Cincinnati. See *Merrell, William Stanley*, under BIOGRAPHY.

Ohio State University, College of Medicine. See under MEDICAL EDUCATION.

Oklahoma

Thomas Cullimore. See under BIOGRAPHY [Perry, Okla.'s first doctor].

Oregon

Marcus Whitman. See under BIOGRAPHY.

Pennsylvania

CRABTREE, JAMES A.: see under PUBLIC HEALTH AND SOCIAL MEDICINE [Decade of public health in Pennsylvania].

DAIN, N. and CARLSON, E. T.: see under HOSPITALS [Patient care at Friends' Asylum, Frankford, Pa.].

REIF, EDWARD C. and THELMA C.: see under PHARMACY [Western Pennsylvania pharmacy].

ROGERS, F. B.: see under MEDICAL SCIENCE AND SPECIALTIES [Neurology in Philadelphia].

SHRYOCK, R. H.: The College of Physicians of Philadelphia in historical perspective. *Tr. & Stud. Coll. Phys. Philad.*, 1960, 4 ser., *27*, 150-57.

Philippines

OCAMPO, G. DES: see under MEDICAL SCIENCE AND SPECIALTIES [Philippine ophthalmology].

VALDES, B. J.: see under MEDICAL SCIENCE AND SPECIALTIES [Surgery in the Philippines].

Philippine General Hospital. See under HOSPITALS.

Rhode Island

POTTER, A. L.: The old order changeth. [Presidential address delivered to the Rhode Island Medical Society.] *R. I. M. J.*, 1960, *43*, 375-78.

South Carolina

GUESS, J. DECHERD: The Greenville County Medical Society. Historical sketches. *J. South Carolina M. A.*, 1960, *56*, 18-21, 65-69, 101-103, 185-187.

——: see *Brockman, William Thomas*, under BIOGRAPHY [Greenville's elder statesman].

——: see under HOSPITALS [Greenville's hospitals].

Tennessee

HOLMES, JACK D. L.: see *Smith, Ashbel*, under BIOGRAPHY [letter on a university in Memphis].

Texas

BURLAGE, HENRY: see under PHARMACY [University of Texas College of Pharmacy, 76th year].

Distaff and the caduceus. [Early pioneering women in Texas medicine.] *Texas J. Med.*, 1960, *56*, 885-86.

E. N. Fielding. See under BIOGRAPHY [Early Texas peripatetic dentist].

West Virginia

VAN LIERE, E. J. and DODDS, G. S.: see under MEDICAL EDUCATION [Women in medicine at West Virginia University, 1902-1957].

Wisconsin

HARSTAD, PETER T.: see under DISEASES [Cholera, malaria, and smallpox in Wisconsin].

Did Badger doctor treat Jesse James? See *James, Jesse*, under BIOGRAPHY.

Medical history center. See under LIBRARIES-MUSEUMS.

Most doctors per square mile [11 from Scott Township, Crawford County, Wisconsin]. *Wisconsin M. J.*, 1960, *59*, 685-86.

Henry E. Perrin [Star Prairie, Wis.]. See under BIOGRAPHY.

Pierce County. [Account of physicians.] *Wisconsin M. J.*, 1960, *59*, 585-86.

MEDICAL EDUCATION

BEAN, W. B.: see *Jefferson, Thomas*, under BIOGRAPHY [Jefferson's influence on American medical education].

BELL, WHITFIELD J., JR.: The Medical Institution of Yale College, 1810-1885. *Yale J. Biol. Med.*, 1960, *33*, 169-83.

BOSHES, B.: "Live in the serene peace of laboratories and libraries"—Pasteur. [Medical education in U.S. since 1926]. *Quart. Bull. Northwestern Univ. M. School*, 1960, *34*, 285-93.

BROWN, P. T.: see *Plass, E. D.*, under BIOGRAPHY [Obstetrics and gynecology at State University of Iowa 1926 to 1955].

CARLSON, R. I.: The historical development of medical education in the United States. *Surgery*, 1960, *47*, 695-702.

GARDNER, J. W.: see *Flexner, Abraham*, under BIOGRAPHY.

GEMMIL, C. L.: see *Dunglison, Robley*, under BIOGRAPHY [Educational work at University of Virginia].

[GOODWIN, EVELYN] *Medical education in Brooklyn, the first hundred years, 1860-1960.* Brooklyn, N.Y.: State Univ. N.Y., Downstate Medical Center, 1960, 68 pp.

GORDON, S. J.: The "sack-'em-up" boys. *J. M. Soc. New Jersey*, 1960, *57*, 263-65.

HANAWAY, J.: The coats-of-arms of McGill University and the Faculty of Medicine. *McGill M. J.*, 1960, *29*, 78-87, illus.

KILGOUR, FREDERICK G.: see under LIBRARIES-MUSEUMS [Library of the Medical Institution of Yale College and its catalogue of 1865].

KOPPANYI, T.: Georgetown medical school's past, present, and future. *Georgetown M. Bull.*, 1960, *14*, 159-61.

LIEBOW, A. A.: Medical research at Yale in the twentieth century. *Yale J. Biol. Med.*, 1960, *33*, 193-211.

LIPPARD, V. W.: The Yale School of Medicine in the twentieth century. *Yale J. Biol. Med.*, 1960, *33*, 184-92.

MAGOUN, H. W.: see under MEDICAL SCIENCE AND SPECIALTIES [Northwestern Medical School].

MAJOR, R. H.: see *Hammer, Adam*, under BIOGRAPHY [A German medical academy in St. Louis].

MUNROE, D. S.: The practitioner of medicine—1960 [The Osler Lecture, Vancouver Medical Association]. *Brit. Columbia M. J.*, 1960, *2*, 239-47.

PARKER, F.: see *Hopkins, Johns*, under BIOGRAPHY [Johns Hopkins University].

PARKS, JOHN: The George Washington University School of Medicine. *M. Ann. District of Columbia*, 1960, *29*, 135-38.

ROGERS, FRED B.: see *Romayne, Nicholas*, under BIOGRAPHY [Stormy petrel of American medical education].

SHAFTEL, NORMAN: see *Flint, Austin, Sr.*, under BIOGRAPHY [Medical educator].

SHEPHERD, G. R.: History of continuation medical education in the United States since 1930. *J. M. Educ.*, 1960, *35*, 740-58.

SHRYOCK, R. H.: The role of history in medical education. (Victor Robinson lecture. 2. Introduced by F. B. Rogers.) *Temple Univ. Med. Cent. Bull.*, 1960, *6* (4), 4-9, port. [V. Robinson].

STEWART, C. B.: Comments on the teaching of preventive medicine in Canada. *Canad. M. A. J.*, 1960, *82*, 719-23.

——: A few thoughts on medical education. *Dalhousie M. J.*, 1960, *8*, 7-11.

THOMPSON, J. S.: Canadian medical education—its costs and personnel. *Canad. M. A. J.*, 1960, *82*, 726-29.

THOMS, HERBERT: *The doctors of Yale College 1702-1815 and the founding of the Medical Institution.* Department of the History of Medicine, Yale University School of Medicine, Publication No. 39. Hamden, Conn.: Shoe String Press, 1960, xxi, 199 pp.

THOMSON, E. H.: The history and development of the department of the history of science and medicine of Yale University. *Connecticut Med.*, 1960, *24*, 568-70.

VAN LIERE, E. J. and DODDS, G. S.: Women in medicine in West Virginia University [1902-57]. *West Virginia M. J.*, 1960, *56*, 65-69.

VEITH, I.: The evolution of American medical education. *Medicine of Japan in 1959*, 1959, *1*, 43-53.

WAITE, FREDERICK CLAYTON: Some remarks to alumni about the past. *Western Reserve University School of Medicine, Alumni Bull.*, 1960 (4), *24*, 10-13, 18.

WEISKOTTEN, H. G. and others: An analysis of the distribution and characteristics of medical college graduates, 1915-1950. *J. M. Educ.*, 1960, *35*, 1071-98.

WILSON, V. E.: The University of Missouri School of Medicine. *Missouri Med.*, 1960, *57*, 460-68.

YALE UNIVERSITY: *Exhibitions in Yale University on the occasion of the sesquicentennial celebrations of the School of Medicine.* New Haven: Yale University Press, 1960.

Yale University School of Medicine sesquicentennial, 1810-1960. New Haven, 1960, illus. [Short history of the School and programme of the sesquicentennial celebrations.]

YOUNG, R. H.: Commemorative remarks. [Northwestern University Medical School]. *Quart. Bull. Northwestern Univ. M. School*, 1959, *33*, 293-94.

Harvard Medical School in 1788-89. See *La Terrière, Pierre de Sales*, under BIOGRAPHY.

History of the Long Island College Hospital, Long Island College of Medicine, and the State University of New York College of Medicine at New York City. Alumni Association highlights 1880-1955 and biographies of graduates 1900-1955. [New York, 1960] xv + 448 pp., illus.

New York Medical College centenary. *MD M. Newsmag.*, 1960, *4* (3), 150, illus.

Ohio State University, College of Medicine [History of the past 25 years of the College]. Columbus, O., 1960.

MEDICAL SCIENCE AND SPECIALTIES

AGNEW, L. R. C. and SHELDON, G. F.: see *Physick, Philip Syng*, under BIOGRAPHY [Father of American surgery].

ALPER, L.: The history of neurology during the nineteenth century. *Bull. U. Miami Sch. Med.*, 1960, *14*, 75-82.

ALVAREZ, W. C.: The history of gastroenterology. *J. Internat. Coll. Surg.*, 1960, *33*, 611-21.

ARRINGTON, G. E., JR.; The evolution of the ophthalmologist. *Virginia M. Monthly*, 1960, *87*, 667-68.

——: see *Bolton, James*, under BIOGRAPHY [Place in history of ophthalmology].

BEAN, W. B.: The endeavour of internal medicine, 1859-1959. *A. M. A. Arch. Intern. Med.*, 1959, *104*, 851-61.

BENDER, R. E.: *The conquest of deafness: a history of the long struggle to make possible normal living to those handicapped by lack of normal hearing.* Cleveland: Western Reserve University Press, 1960.

BIERRING, W. L.: Preventive medicine —its changing concepts, 1859-1959. *J. A. M. A.*, 1959, *171*, 2190-94.

BRAZIER, M. A. B.: see *Caton, Richard*, under BIOGRAPHY [Discoverer of electrical activity of the brain].

BURNHAM, J. C.: Psychiatry, psychology and the progressive movement. *Am. Quart.*, 1960, *12*, 457-65.

CALLOMON, F. T.: Zur Frühgeschichte der amerikanischen Dermatologie. II. Führende Arztgestalten aus der Zeit des Aufblühens der dermatologischen Fachwissenschaft in den Vereinigten Staaten (1870-1920). *Hautarzt*, 1960, *11* (1), 34-37.

CARLSON, ERIC T.: Addenda to the early history of hypnotic anaesthesia. *J. Hist. Med.*, 1960, *15*, 81-83.

——: see *Poyen, Charles*, under BIOGRAPHY [Mesmerism].

——, and DAIN, NORMAN: The psychotherapy that was moral treatment. *Am. J. Psychiatry*, 1960, *117*, 519-24.

CARTWRIGHT, F.: The early history of ether. *Anaesthesia*, 1960, *15* (1), 67-69.

CIANFRANI, T.: *A short history of obstetrics and gynecology.* Springfield: C. C. Thomas, 1960.

CLOWES, G. H. A., JR.: see under DISEASES [Historical development of the surgical treatment of heart disease].

COLE, W. H.: The story of cholecystography. *Am. J. Surg.*, 1960, *99*, 206-22.

DAVISON, M. H. A.: The evolution of anaesthesia. *Brit. J. Anaesth.*, 1960, *32*, 141-46.

EDWARDS, P. Q. and L. B.: The story of the tuberculin test from an epidemiologic viewpoint. *Am. Rev. Respir. Dis.*, 1960, *81* (1), Pt. 2.

ELLENBERGER, H.: Cultural aspects of mental illness. *Am. J. Psychotherapy*, 1960, *14*, 158-73.

GENERALES, C. D. J.: Space medicine and the physician. *New York J. M.*, 1960, *60*, 1741-61, illus.

GILBERTSEN, V. A.: see *Miles, William Ernest*, under BIOGRAPHY [Miles abdominoperineal excision in history of curative rectal cancer surgery].

GOLDSMITH, HARRY S.: Some historical aspects of human dissection. II. *B. M. Q.*, 1960, *11*, 89-93.

GREENE, N. M.: see *Ives, Eli*, under BIOGRAPHY [Medical use of ether prior to 1846].

HAYTER, EARL W.: Livestock doctors, 1850-1890: the development of veterinary surgery. *Wisconsin Mag. Hist.*, Spring 1960.

KOBES, H. R.: The cleft palate team—a historical review. *Am. J. Pub. Health*, 1960, *50*, 200-5.

LEDERER, F. L.: The development of otorhinolaryngology and bronchoesophagology. *J. Internat. Coll. Surg.*, 1960, *33*, 83-97, 229-47.

LIEBOW, A. A.: see under MEDICAL EDUCATION [Medical research at Yale in the twentieth century].

LONG, C. W.: see under BIOGRAPHY [First use of sulphuric ether as an anaesthetic].

LONG, ESMOND R.: American textbooks of pathology. *Arch. Path.*, 1960, *70*, 647-48.

LUCAS, G. H. W.: The discovery and pharmacology of cyclopropane. *Canad. Anaesth. Soc. J.*, 1960, *7*, 237-56, illus.

MACMILLAN, M. B.: Extra-scientific influences in the history of childhood psychopathology. *Am. J. Psychiatry*, 1960, *116*, 1091-96.

MAGOUN, H. W.: Concept of brain function in Northwestern Medical School's century. *Quart. Bull. Northwestern Univ. M. School*, 1959, *33*, 322-32.

NATIONAL LIBRARY OF MEDICINE, WASHINGTON: *Notable contributions to medical research by Public Health Service scientists.* A bibliography to 1940 compiled by Jeannette Barry. (P.H.S. publication No. 752.) Washington: U. S. Dept. Health, Education & Welfare, 1960.

NAYLOR, BERNARD: The history of exfoliative cancer cytology. *U. Mich. M. Bull.*, 1960, *26*, 289-96.

NISSEN, R. and WILSON, R. H. L.: *Pages in the history of chest surgery.* Springfield: C. C. Thomas, 1960.

OCAMPO, G. de: A history of Philippine ophthalmology. *J. Philippine M. A.*, 1959, *35*, 827-39.

OLCOTT, C. T.: see under HOSPITALS [Pathology at the New York Hospital, 1810-1932].

O'LEARY, J. L. and BISHOP, G. H.: see *Herrick, Charles Judson*, under BIOGRAPHY [Founding of comparative neurology].

RAVITCH, MARK M.: The story of pyloric stenosis. *Surgery*, 1960, *48*, 1117-43, ports., illus.

—— and HITZROT, J. M.: see *Halsted, William Stewart*, under BIOGRAPHY [Operations for inguinal hernia].

ROGERS, F. B.: Neurology in Philadelphia: personalities and events. *Pharos A. O. A.*, 1960, *23*, 84-90.

SCHICK, B.: The birth of allergy. *Ann. Allergy*, 1960, *18*, 98-101.

SCHNECK, J. M.: *A history of psychiatry.* Springfield: C. C. Thomas, 1960.

SILVERMAN, F. N.: Thymic irradiation: a historical note. *Am. J. Roentgenol.*, 1960, *84*, 562-64.

SNYDER, C.: A bibliography on the history of ophthalmology. 3. 1957 and 1958. *A. M. A. Arch. Ophthal.*, *63*, 330-46.

STOOKEY, B.: see under HOSPITALS [Early neurosurgery in New York].

STRODE, J. E.: Surgery in Hawaii, 1916-1960. *Am. Surgeon*, 1960, *26*, 382-83.

SULLIVAN, T. J.: see *Osler, Sir Wil-*

liam, under BIOGRAPHY [Osler's contributions to dermatology].

VALDES, B. J.: The history and progress of surgery in the Philippines. *Philippine J. Surg.*, 1960, *15* (1), 14-19.

WAGNER, J. A.: Nineteenth century pathologists and the development of pathology in Maryland. *Maryland M. J.*, 1960, *9*, 58-59.

WEAVER, W.: A quarter century in the natural sciences. *Rockefeller Foundation Annual Report*, 1958, 1-122.

WIGGERS, C. J.: Some significant advances in cardiac physiology during the nineteenth century. *Bull. Hist. Med.*, 1960, *34*, 1-15.

Hand over hand. [History of surgical gloves.] *MD M. Newsmag.*, 1960, *4* (3), 170-75, illus.

Scalpel saga, a historical survey of surgery. See *Cushing, Harvey*, under BIOGRAPHY.

The 25,000-mile hand. [Canadian laboratories]. *Laboratory*, 1960, *28*, 98-104, illus.

MILITARY MEDICINE

DUKE, RAYMOND M.: The Army Medical Service School; its history and mission. *U. S. Armed Forces M. J.*, 1960, *11*, 621-40.

FARMER, L.: The early directors of the medical services of the American revolutionary army. *Bull. New York Acad. Med.*, 1960, *36*, 765-76.

FRANKE, NORMAN H.: see under PHARMACY [Confederate recipe book].

GIBSON, JOHN G.: The battle of blood. *U. S. Armed Forces M. J.*, 1960, *11*, 1276-87.

GILMAN, C. M.: Military surgery in the American Revolution. *J. Med. Soc. N. J.*, *57*, 491-96.

HEATON, L. D.: Progress in army medicine: medical progress in World War II, *Maryland M. J.*, 1960, *9*, 432-38.

IVY, R. H.: see under DISEASES [Influenza epidemic of 1918].

KOONTZ, A. R.: see *Senn, Nicholas*, under BIOGRAPHY.

KRANTZ, JOHN C.: see *Lee, Robert E.*, under BIOGRAPHY [Implications of the medical history of General Lee].

RAVEN, C.: Achievements of women in medicine, past and present—women in the medical corps of the army. *Military Med.*, 1960, *125*, 105-11.

ROBERTSON, JAMES I., JR.: see *Dimon, Theodore*, under BIOGRAPHY [Federal surgeon at Sharpsburg].

STRAIGHT, W. M.: Surgery with the Confederate Army in the field. *Bull. Univ. Miami School Med.*, 1960, *14*, 63-64.

SUNSERI, A. R.: The organization and administration of the medical department of the Confederate army of Tennessee. *J. Tennessee M. A.*, 1960, *53*, 41-45, 79-82, 166-73, 212-18, 326-31.

THRONE, MILDRED: see *Thrall, Seneca B.*, under BIOGRAPHY [Iowa doctor in Civil War].

Centenary of the Army Medical School. *Army Med. Serv. Mag.*, 1960, *12*, 91-93, illus.

Joseph Jones. See under BIOGRAPHY [Confederate surgeon].

Herbert Lamont Pugh, naval surgeon. See under BIOGRAPHY.

NURSING

ALGER, GEORGE W.: see *Wald, Lillian D.*, under BIOGRAPHY.

GERDS, GRETCHEN: Making ideals tangible. *Am. J. Nursing*, 1960, *60*, 672-76.

GOOSTRAY, STELLA: see *Nelson, Sophie*, under BIOGRAPHY.

GRAY, JAMES: *Education for nursing.*

The history of the University of Minnesota School. Minneapolis: University of Minnesota Press, 1960, xii, 252 pp., illus.

POTTER, R. and HOFMANN, J.: The School of Nursing at the University of Missouri. *Missouri Med.*, 1960, *57*, 469-72.

STEWART, ISABEL M.: Isabelle M. Stewart recalls the early years [1900-1920]. *Am. J. Nursing*, 1960, *60*, 1426-30, illus.

TURNER, VIRGINIA A.: see *Sirch, Margaret E. F.*, under BIOGRAPHY [Editor of first permanent nursing magazine in the U. S.].

WRIGHT, HELEN and RAPPORT, SAMUEL, editors: *Great Adventures in Nursing*. New York, Harper & Bros., 1960.

From the Journal, Jan. 1910, Feb. 1910, Mar. 1910, Apr. 1910, May 1910, June 1910, July 1910, Aug. 1910, Sept. 1910, Oct. 1910, Nov. 1910, Dec. 1910. *Am. J. Nursing*, 1960, *60*, 70, 217, 347, 533, 687, 823, 996, 1060, 1310, 1447, 1642, 1769.

Give or get $5 [History of American Nurses' Foundation, Inc.]. *Am. J. Nursing*, 1960, *60*, 495.

Historic photographs urgently needed. *Am. J. Nursing*, 1960, *60*, 195.

Hospitals—yesterday and today. See under HOSPITALS.

In the good old days. *Canadian Nurse*, 1960, *56*, 22, 154, 218, 350, 423, 520, 609, 734, 791, 898, 984, 1072.

Instruction in history of nursing. *Nursing Outlook*, 1960, *8*, 631-35. [Includes the following: In a collegiate program by Dorothy M. Smith. In a diploma program by Madeline Hines; In an associate degree program by Eleanor Tourtillot.]

On accreditation. faculty, curriculum, philosophy. *Am. J. Nursing*, 1960, *60*, 1475-78. [How an accrediting program for schools of nursing has developed and why.]

Who's who in the Who's Who or don't be so modest ladies. *Nursing Outlook*, 1960, *8*, 15.

Lucille Petry Leone. See under BIOGRAPHY.

Anna L. Reutinger. See under BIOGRAPHY.

Mary Edwards Shaw. See under BIOGRAPHY.

Martha R. Smith. See under BIOGRAPHY.

PHARMACY

BERMAN, ALEX: see *Lawrence, G. K.*, under BIOGRAPHY.

BLICKE, F. F.: The development of synthetic drugs. *Michigan Alumnus Quart. Rev.*, 1960, *66*, 281-91.

BURLAGE, HENRY: University of Texas College of Pharmacy in its 76th year. *Texas Pharm.*, 1959, *78* (8), 39, 44.

COLE, B. OLIVE: Notes on early pharmacy in Maryland. *Maryland Pharmacist*, 1960, *35*, 676-80, 726-31, 776-82, 855-59.

CRELLIN, J. K.: Britons look at American pharmacy. *J. Am. Pharm. A., Pract. Pharm. Ed.*, 1960, *21*, 774-76, port.

FRANKE, NORMAN H.: A Confederate recipe book. *Am. J. Hosp. Pharm.*, 1960, *17*, 168-71, illus.

GEIS, G.: In scopolamine veritas. The early history of drug-induced statements. *J. Crim. Law*, 1959, *50*, 347-57.

GERSHENFELD, LOUIS: The 1960 Remington Medalist and his co-workers. *Am. J. Pharm.*, 1960, *132*, 428-30, cover, port.

GRIFFENHAGEN, G. B. and YOUNG, J. H.: Old English patent medicines in America. *U. S. Nat. Mus. Bull.*, 1959, No. 218, 155-83, illus.

HEISER, ROBERT A.: Pharmacy finance: an analysis for 1953 to 1958. *Am. Professional Pharmacist*, 1960, *26*, 301-6, illus.

HENDERSON, JAMES: Rexall's golden anniversary. *Canad. Pharmaceut. J.*, 1960, *93* (3), 18-19, illus.

HOLBROOK, S. H.: see *Hartman, Samuel Brubacker*, under BIOGRAPHY [Dr. Hartman's peruna—quackery].

HUBBARD, CLARENCE F.: Those fascinating bitters bottles. *Am. Professional Pharmacist*, 1960, *26*, 250-52, 276, illus.

HUGHES, F. N.: Graduate study and the Canadian research conference. *Bull. Ontario Coll. Pharm.*, 1960, *9*, 3-6, port.

KIDD, KEITH: A view of American pharmacy. *Am. Professional Pharmacist*, 1960, *26*, 764-65, 768-72.

LEBHAR, GODFREY M.: see under JOURNALS [35 year story of *Chain Store Age*].

LEE, C. O.: The Shakers as pioneers in the American herb and drug industry. *Am. J. Pharm.*, 1960, *132*, 178-93.

OSOL, ARTHUR: The United States Dispensatory: 125 years of service to the pharmaceutical professions. *Bull. Parenteral Drug Ass.*, 1960, *13* (1), 13-16.

PATERSON, G. R.: The Canadian formulary. *Am. J. Hosp. Pharm.*, 1960, *17*, 427-35, ports., illus.

QUINBY, J.: see under LIBRARIES—MUSEUMS [Botanical books in Hunt Library, Pittsburgh, Pa.].

REIF, EDWARD C. and THELMA C.: *A contribution to Western Pennsylvania pharmacy*. Pittsburgh: University of Pittsburgh Press, 1960.

RUHMER, OTTO and ZUPKO, ARTHUR G.: *Some contributions by Jews to pharmacy, a historical survey*. Madison, Wis.: Jewish Pharmaceutical Society of America, in cooperation with the American Institute of the History of Pharmacy, 1960, 28 pp.

SUMMERS, J. L.: Hospital pharmacy in the sixties. [Canada]. *Hosp. Pharmacist*, 1960, *13*, 204-5, 230-33.

TARRANT, WILLIAM G., JR.: Prescriptions—today and sixty years ago. *Virginia Pharmacist*, 1960, *44* (7), 31-32.

TOWERS, FRED: see *Austin, W. O.*, under BIOGRAPHY.

WELCH, H. and MARTI-IBAÑEZ, F.: *The antibiotic saga*. New York: Medical Encyclopedia, 1960.

WILSON, ROBERT CUMMING: *Drugs and pharmacy in the life of Georgia, 1733-1959*. Athens, Ga., 1960, 443 pp., illus.

WINKELMANN, J. P.: see *Saugrain, Antoine*, under BIOGRAPHY [Missouri's first pharmacy].

YOUNG, JAMES HARVEY: Patent medicine, an early example of competitive marketing. *J. Economic Hist.*, 1960, *20*, 648-56.

ZUGICH, JOHN J.: Hospital pharmacy in review, 1947-1960. *Am. Professional Pharmacist*, 1960, *26*, 776-79, 781.

American Institute of the History of Pharmacy Proceedings. *Pharmacy in History*, 1960, *5*, 45-60.

A[merican] Ph[armaceutical] A[ssociation] in the nation's capital. *J. Am. Pharmaceut. A.*, 1960, *21*, 407-9, ports., illus.

Kolar Laboratories marks 50th year. *Am. Perfumer and Aromatics*, 1960, *75* (1), 24-27, illus.

The Merck tradition. See *Merck, George*, under BIOGRAPHY.

Merrell of Cincinnati. See *Merrell, William Stanley*, under BIOGRAPHY.

Museum exhibits record pharmacy's heritage. *J. Am. Pharmaceut. Ass.*,

Practical Pharm. Ed., 1960, *21*, 488-89, illus.

No powdered humming birds, but most other kinds of mystery and magic in a New York pharmacy. *Times*, 1959, Dec. 30th.

Joseph M. Bransky. See under BIOGRAPHY.

John Carnrick. See under BIOGRAPHY.

Roy Bird Cook. See under BIOGRAPHY.

Edward Mead Johnson. See under BIOGRAPHY.

Omar Melville Mitchell. See under BIOGRAPHY.

Dr. Justin L. Powers. See under BIOGRAPHY.

Wilbur J. Teeters. See under BIOGRAPHY.

George Urdang. See under BIOGRAPHY.

PRIMITIVE MEDICINE

CHEELY, WALTER H.: The madstone, a medical curio. *J. Illinois Hist. Soc.*, 1960, *53*, 409-13 [Used in cure of hydrophobia and snake bite].

FORMAN, JONATHAN: Indian medicine in Central Ohio. Franklin County Historical Society, *Landmarks*, 1960, *1*, 16-19.

GLEASON, C. W.: How to cure catarrh. From "Everybody's own physician," by C. W. Gleason, M. D., published by H. N. McKinney & Co., Philadelphia, 1873. *Inhal. Ther.*, 1960, *5*, 12-14, 25, illus.

LEE, J. G.: Papago Indian medicine. *Arizona Med.*, 1960, *17*, 87-89.

PROFESSIONAL HISTORY

DAVIS, LOYAL: *Fellowship of Surgeons. A history of the American College of Surgeons.* Springfield, Ill.: Charles C Thomas, 1960, vi + 523 pp.

GUION, C. M.: Contribution of medical women to society. *J. A. M. Women's A.*, 1960, *15*, 764-70.

These were the first [Medical Women]. *J. A. M. Women's A.*, 1960, *15* (1), 72.

PUBLIC HEALTH AND SOCIAL MEDICINE

BIRD, H. A. and MELANSON, J. A.: The provincial laboratory services in New Brunswick. *Canad. J. Pub. Health*, 1960, *51*, 353-58.

BROWN, V. P. and NABERS, J. P.: see under DISEASES [Pioneer crusaders against tuberculosis in Jefferson County, Ala.].

CLEMMER, JOHN J.: The approved public health laboratory system in New York State. *New York J. Med.*, 1960, *60*, 3221-29.

CRABTREE, JAMES A.: A decade of public health in Pennsylvania: prelude to the future. *Am. J. Pub. Health*, 1960, *50*, 942-47.

FRANK, L. L.: Communal medical care: a study of its origins. *Am. J. Gastroenterology*, 1960, *33*, 214-34.

GENOVESE, EUGENE D.: The medical and insurance costs of slaveholding in the cotton belt. *J. Negro Hist.*, July 1960.

HANLON, JOHN J., ROGERS, FRED B. and ROSEN, GEORGE: A bookshelf on the history and philosophy of public health. *Am. J. Pub. Health*, 1960, *50*, 445-58.

HARRISON, H. M.: The end of an era. [Canadian Medical Institute—composed of 3 insurance companies—gave periodic health examinations.] *Canad. M. A. J.*, 1960, *82*, 1166-67.

HILDES, J. A.: Health problems in the Arctic. *Canad. M. A. J.*, 1960, *83*, 1255-57.

KELLY, A. D.: Health insurance in New

France. *Canad. M. A. J.*, 1960, *82*, 1284-86.

LAPOINTE, DONAT: Pathologie pédiatrique de la population latine du Canada dans les derniers vingt ans. *Laval Méd.*, 1960, *29*, 186-92.

OETTINGER, KATHERINE B.: Growth and meaning of White House Conferences on Children and Youth. *Children*, 1960, *7*, 3-8.

RETZLAFF, ALLEN T.: Frauds and quacks. Part I: the Hoxsey "Cancer Cure." *Bull. Ass. Food & Drug Officials*, 1960, *24*, 39-40.

——: Frauds and quacks. Part II: The visible spectrum projector case. *Bull. Ass. Food & Drug Officials*, 1960, *24*, 40-42.

ROGERS, FRED B.: "Before the storm"—the Fourth National Quarantine and Sanitary Convention—1860. *Philadelphia Med.*, 1960, *56*, 795-99. *Am. J. Pub. Health*, 1960, *50*, 1032-34.

ROSEN, G.: Reflections on education for prevention. *Canad. J. Pub. Health*, 1960, *51* (1), 8-13.

——: A healthier world. In: *The Nation's Children*, New York: Columbia U. Press, 1960, Vol. I, 20 pp.

SEGALL, H. N.: History of the Canadian Health Association. *Manitoba M. Rev.*, 1960, *40*, 94-96. *Un. méd. Can.*, 1960, *89* (1), 82-85.

SPICER, W. S.: Air pollution and health, [With an historical introduction.] *Maryland M. J.*, 1960, *9*, 688-93.

UNITED STATES, NATIONAL INSTITUTES OF HEALTH: *The Rocky Mountain Laboratory, Hamilton, Montana; a brief history of its growth and research activities.* (U. S. Public Health Service Publication no. 688.) Bethesda: U. S. Dept. of Health, Education, & Welfare, Public Health Service, National Institutes of Health, 1960, 13 pp.

UNITED STATES, NATIONAL OFFICE OF VITAL STATISTICS: *First things and last: the story of birth and death certificates.* (P. H. S. Publication No. 724.) Washington: Public Health Service, 1960.

UNITED STATES, PUBLIC HEALTH SERVICE: *Historical roster of state and territorial health officers, 1850-1960, presented with the collaboration of the Association of State and Territorial Health Officers.* Washington, 1960.

WASHBURN, B. E.: *As I recall: the hookworm campaigns initiated by the Rockefeller Sanitary Commission and the Rockefeller Foundation, in the Southern United States and tropical America.* New York: Rockefeller Foundation, 1960.

WILSON, WALLACE A.: Health insurance—a flash-back. [Health insurance in B. C. in the 1930s.] *Brit. Columbia M. J.*, 1960, *2*, 795-808.

Aqua impura. Urban problems of water pollution. *MD M. Newsmag.*, 1960, *4* (2), 150-55, illus.

Carl Voegtlin, first Director of Cancer Research of the Public Health Service. See under BIOGRAPHY.

The formative days, 1938-1939 . . . American Industrial Hygiene Association. *Industrial Med. Surg.*, 1959, *28*, 407-15.

Selwyn D. Collins. See under BIOGRAPHY [His contributions to health statistics].

THE JOHNS HOPKINS INSTITUTE OF THE HISTORY OF MEDICINE

REPORT OF ITS ACTIVITIES, DURING THE ACADEMIC YEAR, 1960-61

The policies of the Institute in relation to the new curriculum of The Johns Hopkins School of Medicine and the Training Grant obtained from the National Institutes of Health have been discussed in the reports for the two previous years as published in this *Bulletin*, 1959, vol. 33, pp. 574-580, and 1960, vol. 34, pp. 566-569.

I. *Staff*

Owsei Temkin, William H. Welch Professor of the History of Medicine and Director of the Institute of the History of Medicine.
Gerald J. Gruman, Assistant Professor of the History of Medicine.
Edwin S. Clarke, Instructor in the History of Medicine.
Sanford V. Larkey, Lecturer in the History of Medicine.
Ludwig Edelstein, Lecturer in the History of Medicine.

With the appointments of Dr. Gruman and Dr. Clarke as of September 1, 1960, the Institute reached the numerical strength needed to carry on its teaching obligations on a level permitting all members of the staff a proper balance of teaching, research, and other (administrative and editorial) activities. At the same time the fellowship program under the N. I. H. Training Grant gathered momentum. As of July 1, Jerry W. Stannard, Ph. D., and Charles Rosenberg (Ph. D. March, 1961) were appointed fellows; they were joined as of September 16 by Donald G. Bates, M. D. Together wth his classical and philosophical background, Dr. Stannard, who had been teaching at the Pennsylvania State University, brought along an interest in medical botany, while Dr. Rosenberg, who had previously worked on the history of cholera in the U. S. A., concentrated on medical aspects of intellectual history of the nineteenth century. Dr. Bates, a graduate of the medical school of Western Ontario, enrolled in the Faculty of Philosophy of The Johns Hopkins University as a graduate student in the history of medicine.

II. *Courses and Lectures*

Required Work:

Part I: Outlines of the History of Medicine. Year II, first and second quarters, Sat. 9-10. Dr. Temkin.

Part II: Development and Philosophy of Human Biology. Year II, third and fourth quarters, Sat. 9-10. Staff.

Part III: The Medical Sciences in the 19th Century. Year III, first quarter, Mon. 4-5. Staff.

Electives:

The History of Public Health. Third quarter, Wed. 12-1. Dr. Temkin. A lecture course given at the Johns Hopkins School of Hygiene and Public Health where attendance was required; Dr. Gruman contributed a lecture on the Idea of Longevity.

The History of Neurology. Third quarter, Tues. 5-6. Dr. Clarke.

Readings in the History of Science. An informal seminar conducted by Dr. Gruman upon the request of several medical students, in continuation of a similar course during the preceding year.

Others:

Staff and Fellows of the Institute as well as a number of physicians associated with other parts of the Johns Hopkins Medical Institutions met regularly at "Institute Conferences" at which individual work in progress, new publications, and topics of general medico-historical interest were discussed.

On May 3, 1961, Dr. Johannes Steudel, Professor of the History of Medicine at the University of Bonn, Germany, and Visiting Professor of the History of Medicine at the University of Wisconsin, conducted a seminar on "The Present Status of the History of Medicine, Science, and Technology in Germany."

III. *Bulletin of the History of Medicine*

Volume XXXIV of the *Bulletin of the History of Medicine* was completed in the November-December issue of 1960. This contained vi + 600 pages and 22 illustrations. About 134 pages were devoted to materials coming directly from the American Association for the History of Medicine.

A financial statement relating to income and expenditures in its operation of the *Bulletin* for 1960 was sent by The Johns Hopkins University to the American Association for the History of Medicine and published on p. 461 of the current volume of the *Bulletin*.

IV. *Exhibits*

Since the "Outlines" course is given in the Basic Science Building of the medical school, two exhibits illustrating the development of medicine were arranged in the great hall of the Institute: one covering the material till 1650, the other continuing up to the present time.

A special exhibit was arranged by Dr. Chesney, Dean Emeritus of the Medical Faculty, and Mrs. Janet Koudelka on the occasion of the commemoration of the hundredth anniversary of William H. Howell (see *Bulletin of the Johns Hopkins Hospital*, July, 1961).

V. *Collections*

Books and Pamphlets:	
Purchases	130
Gifts	19
	149
Periodicals:	
Titles subscribed to	34
Titles exchanged	17
Titles donated	18
	69

The Institute takes this opportunity to thank once more the many donors who kindly gave books, pamphlets, reprints, and other materials for the Institute's collections.

VI. *The Johns Hopkins Medical History Club*

The meetings of The Johns Hopkins Medical History Club held during the year have previously been reported in the *Bulletin*. The meeting of February, 1961, had as its program four papers presented by members of the Institute. The officers of the Club for the year were: Palmer H. Futcher, President; Eugene Meyer, III, Vice-President; Owsei Temkin, Secretary; Sanford V. Larkey, Delegate to the American Association for the History of Medicine.

OWSEI TEMKIN

MEDICO-HISTORICAL NEWS AND ACTIVITIES

CORRESPONDENCE, REPORTS, AND QUERIES

INTERNATIONAL SYMPOSIUM ON THE HISTORY OF NEUROLOGY

In July, 1957, an Anglo-American Symposium on the History and Philosophy of Knowledge of the Brain and its Functions was held in London. It was planned as an historical introduction to the First International Congress of Neurological Science held in Brussels, briefly noticed in the *Bulletin* (1957, *31*: 489). In view of the success of this meeting it was agreed that a similar symposium should be arranged to precede the 7th International Congress of Neurology to be held in Rome, 10-15 September, 1961. Under the auspices of the World Federation of Neurology, a Commission on the History of Neurology directed by its Secretary, Professor Luigi Belloni of the Istituto di Storia della Medicina dell'Università di Milano, carried out this plan.

The International Symposium on the History of Neurology was held in the Villa Monastero at Varenna on the Lake of Como from August 30 to September 1, 1961. The following papers were delivered: K. D. Keele, London, "Leonardo da Vinci's studies of the central nervous system"; C. D. O'Malley, Los Angeles, "Studies of the brain during the Italian Renaissance"; A. Pazzini, Rome, "La nevrologia a Roma nel seicento e al principio del settecento"; L. Belloni, Milan, "L'opera nevrologica di Domenico Cotugno"; D. M. Schullian, Ithaca, "Domenico Cotugno as humanist"; J. Théodoridès, Paris, "Lazzaro Spallanzani et le sens de l'orientation chez les chauves-souris"; P. Franceschini, Florence, "L'opera nevrologica di Antonio Scarpa"; M. A. B. Brazier, Los Angeles, "Fontana: Scientist of the Trentino"; K. E. Rothschuh, Münster, "Die neurophysiologischen Beiträge von Galvani und Volta"; E. Benassi, Turin, "Spunti di elettroterapia nell'opera di Luigi Galvani"; G. Moruzzi, Pisa, "L'opera elettrofisiologica di Carlo Matteucci"; C. Berlucchi, Pavia, "L'opera nevrologica di Bartolomeo Panizza"; S. Iurato, Milan, "Alfonso Corti"; B. Zanobio, Pavia, "L'opera nevrologica di Camillo Golgi"; G. Lambertini, Naples, "L'opera nevrologica di Angelo Ruffini"; E. Fadiga, Bologna, "Le ricerche avanti Luciani"; P. Crepax, Urbino, "Luigi Luciani"; H. Fischgold, Paris, "D'Angelo Mosso à Hans Berger"; A. Zambianchi, Pavia, "L'opera nevrologica di Cesare Lombroso." It is expected that these papers will be published in book form, as were the proceedings of the 1957 meeting.

It seems likely that in the future an historical symposium will be held in conjunction with each international congress of neurology, and that the topics for discussion will deal with the history of the neurological sciences in the country in which the congress is being held.

EDWIN CLARKE

THE INTERNATIONAL HIPPOCRATIC FOUNDATION OF COS

With Hellenic beginnings but gradually becoming international in scope, a movement to reemphasize Hippocratic ideals in medicine culminated in the ratification by royal decree of King Paul, 29 October 1960, of the statutes of the International Hippocratic Foundation of Cos. The Foundation hopes that all physicians the world over will eventually become members of the Foundation; an enrolment fee of 10 drachmas (about $1) gives permanent membership. President of the Foundation is Professor Spyridion N. Oeconomos.

A site has already been purchased on the island of Cos, on a hill to the left of the Asclepieion. It is hoped that the Hellenic Hippocratic House will be completed in 1962 and that the construction of the Hippocratic Houses of other countries will then be started. It is expected that the first International Medical Congress of Cos will be called in 1965 and that King Paul of the Hellenes will then award the First Hippocratic Prize (100,000 drachmas) to the best medical work of a physician of any country.

Included in the aims of the International Hippocratic Foundation of Cos is the offering of hospitality at trifling cost to the physician who "wishes to carry out medical and historical studies and investigations in the Asclepeion and the other archaeological treasures of Cos."

In a letter published in the *JAMA*, September 16, 1961, p. 813, Dr. Chauncey D. Leake (presently President of The American Association for the History of Medicine) expresses the hope that physicians throughout the world will contribute to the effort and points out that contributions may be sent to Professor Oeconomos, Rue Grivéon 3, Athens, Greece.

UNIVERSITY OF CAPE TOWN: MEDICAL HISTORY CLUB

On Wednesday, 16th August, 1961, at an informal but enthusiastic meeting in the Medical Library, a club was founded for the "study, discussion and propagation of medical history in Cape Town." An interim steering committee was elected consisting of Dr. H. Gordon (Convenor), Miss S. Katcher (Secretary), Dr. A. P. Blignault and Dr. R. L. Kleinman.

To mark the 200th anniversary of the publication of Morgagni's *De Sedibus et Causis Morborum* an exhibition was arranged in the Medical Library to illustrate the development of textbooks of pathology. Original editions, facsimiles, photographs and morbid anatomical specimens were displayed to illustrate the works of Benivieni, Bonet, Morgagni, Rokitansky, Virchow, Aschoff, Muir and Anderson. By a happy coincidence, Dr. W. A. D. Anderson of Miami was visiting this university as guest professor of pathology and the latest (1961) edition of his "Textbook of Pathology" arrived just in time to be included in the exhibition. At a ceremony on the 22nd September 1961, Dr. Anderson formally opened the exhibition and presented a short account of the development of pathology textbooks in North America.

The medical history club has prepared a small brochure containing biographical notes on the pathologists whose works were included in the exhibition.

HYMIE GORDON

QUERIES

Answers to *Query* 1 (*Bull. Hist. Med.*, 1961, *35*:277):

. . . in 1939 R. A. Laughlin published an article, "Famous premature babies" in *Hygiea, 17*, p. 203.

Robert Rosenthal, M. D., 2000 Lower Saint Dennis Road,
Saint Paul 16, Minn.

Professor Guido Fanconi of Zurich cites in CIBA Zeitschrift Nr 129 (1952) p. 4768 the following premature infants who later achieved fame: Livia Drusilla (58 A. C.-29 A. D.), Augustus' wife; Fortunio Liceti (1577-1657) who, according to Peiper (Chronik der Kinderheilkunde, 3rd ed., p. 462) was 5½ inches long at birth; Cardinal Richelieu (1585-1642).

Felix Bloch, Librairie Centrale et Universitaire,
4, Place de la Riponne, Lausanne, Switzerland.

Answer to *Query* 3 (*Bull. Hist. Med.*, 1961, *35*:382): While this may have originated with O. W. Holmes or with Sir William Osler, I can recall hearing this at several different times and various places (rural New York, Canada and Southern Virginia) long before I thought of studying medicine, *always* attributed to James Cardinal Gibbons (1834-1921) who was a neighbor of Osler's and Archbishop of Baltimore from 1877 until his death. This may have been a quotation *by* Cardinal Gibbons, but it is attributed to him—sometimes "incurable" replaces "chronic."

William D. Sharpe, M. D., Pennsylvania Hospital, 8th and
Spruce Streets, Philadelphia 7, Pa.

ANNOUNCEMENTS

AMERICAN ASSOCIATION FOR THE HISTORY OF MEDICINE

Student Essay Contest for the William Osler Medal

The William Osler Medal of the American Association for the History of Medicine is awarded for the best unpublished essay on a medico-historical subject written by a student in one of the medical schools of the United States or Canada. This medal commemorates the great physician, Sir William Osler (1849-1919), who generated a love for the humanities among students and doctors alike.

Essays must not exceed 10,000 words in length and should demonstrate either original research or an unusual appreciation and understanding of a medico-historical problem. The prize-winning essay will be submitted to the Editorial Committee of the Association, which will decide whether it should be recommended for publication in the *Bulletin of the History of Medicine*, the official organ of the Association.

All students who are candidates for the degree of Doctor of Medicine, including the class of 1961, are eligible. Essays should be submitted by April 1, 1962 to the Secretary of the Association, John B. Blake, Ph. D., National Library of Medicine, 7th St. & Independence Ave., Washington 25, D. C.

XTH INTERNATIONAL CONGRESS OF THE HISTORY OF SCIENCE

The Xth International Congress of the History of Science will be held at Cornell University, Ithaca, New York, from 26 August to 31 August 1962 and at The American Philosophical Society, Philadelphia, Pennsylvania, from 31 August to 2 September 1962.

Communications on the following subjects are invited and will be assigned to the appropriate sections: I. General problems in the history of science; methods, philosophy and historiography of science. II. History of Technology and Applied Science. III. Science in Antiquity. IV. Science in the Middle Ages and the Renaissance. V. Mathematics and the Exact Sciences after 1600 (1. History of mathematics. 2. History of physics and astronomy. 3. History of chemistry, including pharmacy). VI. Biological and Earth Sciences after 1600 (1. Natural history and biology, including medical biology. 2. Geography, exploration, geology, and oceanography). VII. Sciences of Man (psychology, anthropology, sociology, linguistics).

Notification of the wish to read a paper must reach the Secretary no later than 1 May 1962.

Oral presentation of papers is *strictly limited* to 15 minutes. An abstract, *not to exceed 200 words,* must be submitted in a clean typescript (suitable for reproduction) to the Secretary of the Congress by 1 May 1962. No paper may be read for the author in his absence. For publication in the *Actes* of the Congress, a finished typescript not exceeding 1500 words must be handed to the Secretary

immediately after the session at which the paper is read. It is not necessary to present a paper in order to participate in the Congress.

Communications must be presented in English, French or Russian.

General Plans for the Congress (subject to minor revisions)

Registration: Sunday afternoon, 26 August 1962, on the Cornell University Campus in Willard Straight Hall where an informal reception will be held at 8 p. m.

A Cornell residential hall, where single and double rooms will be available and where meals will be served, has been set aside to house the members of the Congress during the stay in Ithaca. The total cost for these accommodations, including meals, will be between $40 and $50 per person. Other accommodations will be available near the University Campus.

On the afternoon of Friday, 31 August, the Congress will move to Philadelphia, where accommodations will be available at the Benjamin Franklin Hotel, the new headquarters of the Congress. Academic sessions will be held at the Hotel and The American Philosophical Society nearby. The final banquet of the Congress is to be held in Philadelphia. Sightseeing walks and bus tours are planned in the Philadelphia area.

For further details, including travel information, registration fees, etc., write immediately to The Secretary, Xth International Congress of the History of Science, Cornell University, Ithaca, N. Y., U. S. A.

NATIONAL NEWS

American Academy of the History of Dentistry

The American Academy of the History of Dentistry met in Philadelphia, October 13, 1961. Presidential address, Harry B. McCarthy; "History of the Casting Process in Dentistry," George M. Hollenback; "Byways of Dental History," Gardner P. H. Foley; "The Horace Wells Story," Harold L. Faggart.

American Institute of the History of Pharmacy

Nominations for the next George Urdang Medal for distinguished historical writing will be accepted until 31 December 1961. A postal card request addressed to the Institute office, 356 Pharmacy Building, Madison 6, Wisconsin, will bring a nomination form that should be returned to Dr. P. H. Brans, Secretary-General, Académie Internationale d'Histoire de la Pharmacie, Nieuwe Binnenweg 420, Rotterdam-W. 2, The Netherlands.

Dexter Award in the History of Chemistry

Dr. J. R. Partington, professor emeritus in Queen Mary College, London, received the sixth annual Dexter Award for his work in the history of chemistry. Professor Partington's *Short History of Chemistry*, now in its third edition, was published in 1937. His historical papers in the field of chemistry have been published in journals all over the world. At present he is completing a four-volume history of chemistry, the first of which will be published this year by the MacMillan

Company. The Division of History of Chemistry of the American Chemical Society requests nominations for the 1962 Dexter award. Information in duplicate should be sent to the Secretary of the Division, Sidney M. Edelstein, Dexter Chemical Corporation, 845 Edgewater Rd., Bronx 59, N. Y. by March 10, 1962.

National Library of Medicine

The National Library of Medicine *News*, vol. XVI, no. 10, October, 1961, announces the dedication ceremony for the new National Library of Medicine building, December 14, at 3 p.m. On December 15, at 10 a.m., there will be a general Symposium on Books and Medicine. Speakers will be: Major General Joseph H. McNinch, "The Military Tradition of the National Library of Medicine"; Miss Gertrude L. Annan, "Medical Librarianship in the United States"; Dr. Carl W. Condit, "The Building Arts in the Service of Librarianship"; Dr. Chauncey D. Leake, "History, Science, and Librarianship"; Dr. William B. Bean, "Physicians and Books." Short vignettes of "Three Who Made the Library" will conclude this program: Dr. Estelle Brodman will discuss Robert Fletcher, Dr. Dorothy M. Schullian will discuss Fielding H. Garrison, and Dr. Frank B. Rogers will discuss John Shaw Billings.

The New York Academy of Medicine

The Library Publication Committee of the New York Academy of Medicine is adding six paper-back volumes (Hafner Publishing Company) to its History of Medicine Series in early 1962. The Committee looks forward to making these classic texts available to the student, historian, and general reader. The dates indicate the edition used: Philippe Pinel, *A Treatise on Insanity*, 1806 (Introduction by Paul F. Cranefield). Benjamin Rush, *Medical Inquiries and Observations upon the Diseases of the Mind*, 1812 (Introduction by S. Bernard Wortis). Jean Nicolas Corvisart, *An Essay on the Organic Diseases and Lesions of the Heart and Great Vessels*, 1812 (Introduction by Dickinson W. Richards). René T. H. Laennec, *A Treatise on the Diseases of the Chest*, 1821 (Introduction by Paul Klemperer). William Heberden, *Commentaries on the History and Cure of Diseases*, 1802 (Introduction by Paul Klemperer). Jean Martin Charcot, *Lectures on the Diseases of the Nervous System*, 1881 (Introduction by Walther Riese).

Northwestern University

Northwestern University Medical School presents "The Growth of Medicine" lecture series of 1962 on ten consecutive Tuesdays from January 9 to March 13. The lectures are to be held in room 641, Ward Building, from 8 to 9 a.m.

Temple University Medical Center

The Third Victor Robinson Lecture in Medical History at Temple University School of Medicine is to be given November 8, 1961, by Dr. Francis C. Grant, Emeritus Professor of Neurosurgery, University of Pennsylvania. Dr. Grant's topic, "Victory Over Pain," was the title of Victor Robinson's last book. Dr. Grant, a pioneer in neurosurgical procedures for pain relief, will review the history of this special field.

Bertha Spector Award in the History of Medicine

Tufts University Medical School, Boston, bestowed the first Bertha Spector Award in the History of Medicine—a certificate and medal—on Richard G. Neiman of the class of 1963. His essay, "Medical Thought in Colonial New England: An Expression of Minds in Transition," is being published by the School's Department of the History of Medicine.

PROGRAMS OF MEETINGS

Beaumont Medical Club (Yale)

October 6, 1961: "Midwifery and Witchcraft," Thomas Forbes; "Photographic Visits to Some Early Medical Schools of Europe," Leonard Wilson. A travelogue to Northern U. S. and Canada in the footsteps of William Beaumont and Alexis St. Martin (Frederick G. Kilgour) followed.

The Johns Hopkins Medical History Club

December 4, 1961: "Medical Societies and Civil War Politics," Sanford V. Larkey and Janet B. Koudelka; "Hemophilia in Early New England," Victor A. McKusick.

The Society of Medical History of Chicago

December 13, 1961: "The Role of Edith Cavell in the Progress of the Nursing Profession," Marian Swanson and Frederick Stenn; "The Interpretation of Medical Biography upon Sculpture," Doris Appel.

NEWS FROM ABROAD

Switzerland

The University of Basel, Switzerland, has conferred the degree of Dr. med. *honoris causa* on Dr. Walter Pagel of London, an honorary member of the American Association for the History of Medicine.

Editorial Note

"Announcements," if acceptable, are published in the *Bulletin* as early as possible after receipt. However, unless information reaches the editorial office of the *Bulletin* three months in advance, the notice may only appear after the event.

BOOK REVIEWS

HENRY E. SIGERIST. *A History of Medicine,* Volume II: Early Greek, Hindu, and Persian Medicine. New York: Oxford University Press, 1961. xvi + 352 pp. Ill. $11.00.

The first volume of Dr. Sigerist's *History of Medicine* appeared in 1951. It described primitive and prehistoric medicine and the archaic medicine of ancient Egypt and Mesopotamia. The second volume, now before us, deals with early Greek, Hindu, and Persian medicine. It is incomplete; a number of chapters obviously planned are not included. Dr. Fulton's Preface cites Dr. Sigerist's relative isolation with its lack of the wonted stimulus of a busy academic life as a reason why the six years between the appearance of the first volume and Dr. Sigerist's death on 17 March 1957 saw such slow progress. Since no drafted text has been found for any of the remaining volumes of the planned eight volume work, no continuation is to be expected.

Dr. Fulton and the Henry E. Sigerist Research Fund Committee decided to publish the present volume as Dr. Sigerist had left it, asking Professor Ludwig Edelstein to act as General Editor and Dr. Miriam Drabkin to aid in the task. The choice of Professor Edelstein, who for many years had been associated with Dr. Sigerist and whose own research into ancient Greek medicine contributed much to the molding of Dr. Sigerist's views on this period, was a logical one. In a note attached to the last page of the typed copy, Dr. Sigerist had written: "Here my legacy ends." The editors, rightly I think, considered it their task to make this legacy available in the form Dr. Sigerist had given to it. To quote Professor Edelstein's own words: "I have read the text over as an author would read it once more before sending it to the press. Even in the notes, I have not inserted literature that might have been included by Dr. Sigerist, or that came out after his death and should now be referred to" (p. ix). Only in the choice of illustrations did the editors have to make their own additions and selections, since Dr. Sigerist had not been able to make more than a beginning.

The history of this volume goes far to explain its strength and weaknesses. It is based on the fruitful idea of treating the medicine of contemporary cultures, in this case ancient Greek, Hindu, and Persian, side by side, rather than following a single thread from the Greeks to our own days. Here, I think, Dr. Sigerist has made a very important departure in medical historiography, a departure, moreover, which is postulated by our own situation. Modern medicine is increasingly becoming global medicine, and this necessitates a global view of its past.

Following the program laid out in the first volume, land and people, their culture and their diseases, are sketched as the background for the public health, and philosophic trends are outlined to serve the understanding of medical theories. Thus the reader learns much of Greek, Indian, and Iranian history, life, religion, and philosophy, together with their medicine. Unfortunately, the medical parts proper have suffered most from the incompleteness of the book. The first three sections, which deal with Archaic Medicine in Greece (Setting, Homeric Medicine, Religious Medicine, Pre-Socratic Philosophers and Early Medical Schools), Hindu

Medicine (Setting, Early Indus Civilization, Vedic Medicine, Indian Philosophies and Early Medical Schools), and Medicine in Ancient Persia (a very short section of about twelve pages), are not followed by fully developed sequels. "The Golden Age of Greek Medicine" leaves the survey of Hippocratic Medicine unfinished. The parallel section on Classical Hindu Medicine, where we would have expected discussions of Charaka, Sushruta, and Vagbhata, was never written.

The nature of the book requires it to be read rather than to be used as a reference work. Such reading will be highly rewarding, though it is the sweep rather than the depth which is impressive. The vitality of the author was no longer strong enough to rise consistently beyond traditionalism of treatment, to avoid over-simplifications, and to give full attention to the recent literature. As a result, the book will most benefit those who come unprepared and through it make their first acquaintance with the history, life, and medicine of ancient Greece and India. The master's instinct was still sound enough to avoid major mistakes, and the clarity and charm of the presentation are as impressive and enticing as ever before. I, for one, have never come across as lucid and as informative a description of Vedic Medicine as we find on the relatively few pages devoted to it in this book.

Friends of Dr. Sigerist will receive this last legacy with gratitude to those who made its appearance possible.

OWSEI TEMKIN

JUAN B. LASTRES AND FERNANDO CABIESES. *La trepanacion del cráneo en el Antiguo Perú.* Lima: Imprenta de la Universidad nacional mayor de San Marcos, 1960. 207 pp. Ill.

Civilization along the Pacific coast of South America had existed for centuries prior to the earliest written records of the Spanish Conquistadores. Unfortunately, no form of communication in stone tablets or script seems to have been used by the inhabitants of this lush coastal region in the pre-Christian millenniums. Burial grounds in the peninsula of Paracas, which juts in the blue Pacific about a hundred miles south of the present city of Lima, have yielded evidence in the form of clothing, household utensils, tools, and cranial defects which suggest that the people of those eras had a highly developed civilization. This culture was only one of many which flourished along the coast of Peru before the extensive Incan empire which ended with the Spanish conquest. A presentation of these precolumbian Peruvian societies serves as a background for a discussion of trephinations in primitive peoples of the world. These matters occupy the first half of the book by Professors Lastres and Cabieses.

In the second half of the book, the authors give an account of trephining by the early Peruvians, illustrating their description with excellent photographs of many skulls with cranial defects. The instruments employed for the removal of the bone are shown, and ceramic huacos depicting their use attest to the *modus operandi*. The authors believe, after analysing the archaeological evidence, that the defects were made for therapeutic reasons—in many cases for the relief of the sequelae of cranial trauma, for quite a few skulls have fractures at or near the site of the

defect. They conclude, however, that the surgical skill of the precolumbian operators does not mean that they had any special knowledge of cerebral function. In fact, the authors believe that the surgical procedures were entirely extradural, and that the ancient skull borers had no clear concept of encephalic mechanisms.

The book is a well written treatise (in Spanish) on primitive trephination with exceptionally good illustrations. The text contains 178 plates, many having 2 or more figures. The reviewer's one criticism, which is not unique for this book, concerns the tendency to discuss the trephinations of a millenium or so before Christ, and those of the millenium after Christ, as if they were the same. Thus, the surgical procedures carried out by the Paracan operators and those by the Incan shamans several thousand years later are presented together.

The book contains a good bibliography of the world literature and an adequate index. Medical historians and archaeologists will find in this monograph practically all that is known on the subject of primitive trepanation.

A. Earl Walker

W. S. C. Copeman. *Doctors and Disease in Tudor Times.* London: Dawson's of Pall Mall, 1960. xiv + 186 pp. Ill. 42s.

Stanford E. Lehmberg. *Sir Thomas Elyot, Tudor Humanist.* Austin: University of Texas Press, 1960. xv + 218 pp. Ill. $4.75.

The medicine of Tudor times in England was not one of great practical achievement. It was in effect an age of building foundations. From a period of confusion there was evolved a reasonably united and respected medical profession, characterized by improved ethical standards and a sense of responsibility to both the government and the public. The chief events of the period were the establishment of the College of Physicians in 1518 and the incorporation of the surgeons twenty-two years later as the United Company of Barber-Surgeons. Because of the training provided by these two institutions, public confidence in physicians and surgeons soon developed, alongside new trends in the theory and practice of medicine. Priest-physicians such as Andrew Boorde, writing for their colleagues in the vernacular and using much sound common sense, tended to raise the standard of many general practitioners unqualified to read Latin or ingest the less practical scholastics of men who only studied medicine in their libraries. But the scholar-physicians, such as Thomas Linacre, were useful in discovering and translating many original Greek manuscripts, at the same time freeing medicine from confusing medieval commentaries and faulty texts. They too set the new standards, an achievement not possible for Boorde or his imitators.

The story of this evolution has been pleasantly and adequately recounted in Copeman's FitzPatrick Lectures, delivered before the Royal College of Physicians of London in 1958 and 1959 and now published as an excellent, sound, and readable book. Compact in these pages is much evidence of wide reading and thoughtful scholarship on a variety of topics, including chapters on medical education, diagnosis, contemporary diseases and their treatment, public health, and hygiene. Although Copeman, in his Preface, thanks many friends who helped to direct his "amateur

steps along the slippery path of historical research," no apology is needed for the end product. No one has depicted more adequately the trends in theory and practice in Tudor times and their effect on the evolution of medicine than this devoted Fellow of his College. The team of Poynter, Payne, Wade, and Bishop no doubt helped, but Copeman deserves the honors for a timely aid to the history of medicine.

Although the works of Andrew Boorde, written in English by a keen-witted observer and based more on practical insight than scholarly pursuit, were widely read, they were probably not more influential than the single book of Thomas Elyot, *The Castel of Helth*, first published about 1536 and issued at least fourteen times before 1610. Elyot, a scholarly layman and humanist, also writing in the vernacular, provided his fellow countrymen with the knowledge necessary for preserving health and treating common ailments. He was, like Linacre, widely read in the Latin texts, and basing it upon them he wrote the earliest important manual of health originally written in English. His works bridge the gulf between Tudor England and antiquity, and in addition he played an important part in the development of the English language. He made a conscious effort to enrich the language and to write clearly and fluently, developing a Latin dictionary to provide an English equivalent for virtually every important Latin word.

Elyot's life has been splendidly summarized by Dr. Lehmberg in his scholarly biography. No one knew the events of Tudor times better than Thomas Elyot, the pupil of Sir Thomas More and probably trained in medicine by Linacre. He served as the chief clerk of the King's Council for six years when important events were taking place and later was an embassador. During the dissolution of the English monasteries he was a member of Parliament. This book, written by an American, at Cambridge University, England, is a discerning and illuminating study of an important man whose influence on Tudor medicine was considerable. Note should be made, moreover, of the high standard of book production set by the University of Texas Press in format and illustration.

HENRY R. VIETS

E. DAHL-IVERSEN. *Vor kirurgiske arv. Kirurgien i Danmark i det 19. århundrede.* [Our Surgical Heritage. Surgery in Denmark in the 19th century. Commemorating the Silver Wedding of their Majesties King Frederik IX and Queen Ingrid, May 24, 1960.] Copenhagen: Bianco Luno, 1960. 348 pp. Ill.[1]

Philip Guedalla once said: "The wise historian will search history for its Unknown Soldiers. For though there is rarely a Great Man, there is sometimes a great age." Looking at Denmark upstream in time, one concludes that in the period 1800-1900 she touched the heights in spite of wars, epidemics, loss of territory, bankruptcy, and the coming of the industrial revolution. She had been forced to take the side of Napoleon, and at the beginning of the century Waterloo was still

[1] E. Dahl-Iversen is chief surgeon, Section C, Surgical Division of the Copenhagen Rigshospital. In the autumn of 1960 he received the Lederle Prize for his contribution to the history of surgery in Denmark. (Information sent by Dr. Egill Snorrason of Copenhagen, Secretary of the Danish Society for Medical History.)

to come. She lost Norway in 1814. Frederik VI went to the Congress of Vienna where he received much sympathy but nothing else. In 1864 Slesvig was lost to Germany, a staggering blow. Yet at the end of the century Denmark had cultivated enough virgin land to make up for the loss to agriculture.

The nineteenth century has been called the Golden Age of Danish literature—part of the Romantic movement in Europe. Here we meet Hans Christian Andersen, Sören Kierkegaard, Öhlenschläger, Grundtvig, Baggesen, and others.

Henrich Callisen (1740-1824) was the leading surgeon of Denmark at the turn of the century. His *Systema chirurgiae hodiernae* was first published in 1777. There were four Latin editions and also translations into German, French, Spanish, and Russian. Daremberg had this to say: "La Systema chirurgiae hodiernae (1798) de Henri Callisen brille plus par la clarté de l'exposition et la sûreté du jugement, que par la nouveauté des recherches . . ." While this is undoubtedly true, the trunk of the tree remained to bud and flower at a later time.

Adolph Carl Peter Callisen (1786-1866), nephew of Henrich Callisen, is famous for his *Medizinisches Schriftstellerlexicon der jetztlebenden Ärzte* in thirty volumes, from 1830-1842. Garrison says: "As a complete conspectus of the medical literature of the last half of the 18th century and the first third of the 19th, this production ranks with Haller's as one of the most wonderful ever achieved by a single man. It is invaluable for scope and accuracy."

The revolutionary discoveries in the fields of medicine and surgery during the 19th century were brought forward in medical meetings and the medical press. Denmark has a long literary tradition going back to the Middle Ages. The medical journal *Bibliothek for läger* (Medical Library) was printed in 1809 and is still alive. Except for the *Edinburgh Medical and Surgical Journal* issued in 1805, it is the oldest medical journal in the Western world. In 1858 the weekly *Hospitalstidende* (Hospital Journal) took over from *Hospital Reports*. The following year its chief editor, Andreas Buntzen (1812-1880) iniitated an interesting debate, attacking the tendency of modern therapy. His opponent was an equally brilliant clinician and surgeon Carl Emil Fenger (1814-1884), "hervorragender klinischer Lehrer" (Pagel), who defended the more reasonable approach to physiology and pathology. This debate was followed with great interest in later years by the brilliant medical historian, Julius Petersen (1840-1912) who gave it a prominent place in his book on the development of therapy. There does not seem to be much bitterness between the advocates of the old and the new. Possibly the violence of the times in which they lived made them more tolerant—even heroic. In addition, they knew how to laugh.

The University of Copenhagen began publishing its curriculum in Danish instead of Latin in the year 1833 (The University was founded in 1497), and by the year 1851 Latin was no more the required language for theses and text books. Consequently several "firsts" achieved by Danish surgeons remained unknown to the outside world. A special section of this book is devoted to such inventions and operations.

Speed was essential on the part of a surgeon in the days before anesthesia. Many a doctor spent sleepless nights before a major operation. Sören Eskildsen Larsen (1802-1890) was an exceptionally fast operator, as well as neat and careful. In the beginning of 1847 Larsen operated for the first time with the

patient under ether narcosis, at the Community Hospital. In April of the same year S. A. V. Stein followed this first attempt with eleven cases at the Royal Frederik's Hospital. Both these men had received their education in Denmark and had not studied abroad.

Larsen introduced chloroform in 1848 but preferred ether. Chloroform, however, became very popular for a while, perhaps on account of the cold climate, in which ether evaporates more slowly. Larsen also undertook the first transfusion of defibrinated blood.

The honor of instituting antisepsis in Denmark is shared by Mathias Heronimus Saxtorph (1822-1900) and Valdemar Holmer (1833-1884). Saxtorph operated on a compound fracture in June 1867 under antiseptic conditions. In 1869 he visited Lister and after that the system became general at the Royal Frederik's Hospital. Holmer, at the Community Hospital, in the autumn of 1867 systematized antisepsis on all his wards and made his report in Danish. Saxtorph wrote a letter to Lister in July 1870; this was published in the *Lancet*, while Holmer's work remained unknown until a few years ago. During the years 1889-1890 asepsis began taking the place of antisepsis both in the hospitals of Copenhagen as well as other cities of Denmark.

The first book on Roentgenology appeared in 1899. Author: J. Mygge (1850-1935), Chief physician of the Community Hospital, 3d. Division, Copenhagen.

The present book is for both lay and learned, and there are many fascinating sidelights on the idiosyncrasies of surgeons and doctors. The story of Claudius Julius Boye (1823-1879) recalls to us the name of Ephraim McDowell (1771-1830) who performed his famous ovariotomy in 1809. Boye gave up the practice of medicine after five years of it and retired to a ranch in Jutland to devote himself to country life. Fate intervened in the form of a farmer's wife suffering from a large ovarian tumor. He was at once subjected to urgent appeals and was finally badgered into undertaking a job for which he did not feel competent as he had not had regular surgical training. In spite of many difficulties the operation was successful, and the woman lived to tell her story far and wide with the consequence that patients streamed to his place from all over the country. His first operation took place in 1867. Before his death in 1879 he had done 70 ovariotomies with 42 successes, thanks to his manual dexterity and conscientious post-operative care.

Nothing was spared in the production of this book. There are splendid illustrations—reproductions of engravings, lithographs, paintings and photographs of surgeons, hospitals, instruments invented by the men doing special work. Reading it, one becomes strangely aware that this was once real life—and the book good history.

ANNE TJOMSLAND

FRED B. ROGERS. *Help-Bringers: Versatile Physicians of New Jersey.* New York, Washington, Hollywood: Vantage Press, 1960. 125 pp. Ill. $2.95.

Help-Bringers gathers in one volume twelve biographical sketches published previously by the author in various journals, all relating to physicians of the State of New Jersey by birth or adoption. The even dozen were selected not so much for their medical achievements as for the mark they left in various fields of activity.

They span about two centuries, taking us well into the beginning of the present century. If a history of New Jersey medicine is ever compiled, they will prove useful. Much that was hitherto unrecorded or little known has been unearthed. 112 references attest the diligence and skill with which the writer has delved for information off the beaten track. Study of the epitaphs on gravestones, a neglected source of biographical information, proved surprisingly rewarding in several cases. It was also a revelation to learn that Alexander Hamilton's physician took oral temperatures.

The title of the book was obtained from the motto on the seal of the Medical Society of New Jersey: "Opiferque Per Orbem Dicor," the *Opifer* of Ovid's *Metamorphoses* (referring to Apollo, the sire of all Aesculapians), being translated "Help-Bringer."

Henry Leber Coit, "Pioneer pediatrician," protagonist of a sanitary milk supply, completes this parade of medical worthies. He founded the Babies' Hospital of Newark, which is stated to be the second of its kind in the United States, the first being erroneously said to have been founded in New York City. The oldest hospital in this country exclusively devoted to the medical care of children is the Children's Hospital of Philadelphia.

Scion of a New Jersey medical family that extends through four generations, Dr. Rogers, with justifiable pride, tends to magnify his candidates chosen for celebrity. But who am I to cavil? The important fact is that he has written a series of good biographical essays that have already attracted favorable attention. Versatility is the keynote of his theme. Possessed of a strong innate religious feeling, he frequently alludes to the religious influences that acted upon the characters of his heroes. An attractive feature of his literary style is the interjection of discriminating asides and comments, anecdotes, and personality traits. Incidents like Dr. Brackett playing his violin to his own accompaniment on the foot-operated parlor organ; or Dr. Coit bedding for the night under the drug store counter where he worked as a boy, liven the personalities portrayed. Easy to read, the book is at the same time a useful storehouse of biographical data relating to twelve doctors of New Jersey.

SAMUEL X. RADBILL

HERBERT THOMS. *The Doctors of Yale College 1702-1815 and The Founding of the Medical Institution.* Hamden, Conn.: The Shoestring Press, Inc., 1960. xxi + 199 pp., Ill. $6.00.

In form, Dr. Thom's book is a series of short biographies of the men of Yale College 1702-1815 who turned to medicine and of the men who played decisive roles in the early years of the Medical Institution. This series is furnished with introductory matter including a list of 43 doctors, of whom 23 are to be dealt with in more detail in the biographies, and a chapter on the organization and early history of Yale College. The biographies are followed by a highly interesting section "From the author's notebook" and a list of graduates of Yale College (1702-1815) known to have practised medicine. Notes, bibliography, and index complete the volume, which is furnished with a foreword by John F. Fulton.

This is rich material, and one could perhaps have wished for more intensive treatment of the general historical framework. Except for purposes of reference, a succession of very short biographies tends to confuse the reader, who barely becomes acquainted with one subject before being presented with the next. Nevertheless, a completely unmodern world emerges from these pages, yet one which is by no means static but shows the beginnings of a more modern pattern. The early cleric physicians were to be followed by men like Alexander H. Stevens (1789-1869) of whom Dr. Thoms remarks: "When we consider the course of his medical education, it would be hard to improve upon it today, relatively speaking—excellent secondary school preparation, an arts degree from a first class college, a medical degree from a leading medical school, 'resident' training in surgery, study abroad with great masters. The point made is that this excellent pattern was not only possible in his time but it was being pursued by other Americans. Out of it was coming leadership. . . ."

Perhaps more fascinating, however, is the picture of the earlier world in which medical practice was so often but one facet of a man's activities, a world in which a single man could be cleric, lawyer, industrialist, agriculturalist, geologist, literary man, and active citizen. Even in the first decade of the nineteenth century, it was still possible for a young Yale College graduate, Benjamin Silliman, not yet twenty-two years of age, who has been studying law and is considering teaching law in Georgia, to be persuaded to abandon the project and take the proposed chair of chemistry and natural history at Yale, preparing himself for it after acceptance by a course of study in Philadelphia and abroad.

The influence of the Yale men radiates far from Connecticut: one reads of Princeton, South Carolina, Georgia, Dartmouth, Rutgers, Wisconsin, Philadelphia, Brown, Vermont, the New York Hospital, and the New York Academy of Medicine. These men are involved in politics, local and national, in the church, in military duties, in law, teaching, agriculture, geology, mining, general science, mathematics, astronomy, lexicography, translation, and the literary arts. They vary in character from the robust and unwavering Benjamin Gale to the vacillating, difficult, and oversensitive poet-physician, James Gates Percival. Some came to medicine from other fields, some abandoned it in disillusionment, some entered the field as administrators and organizers of medical education. There are specialized interests in surgery, epidemiology, obstetrics, anatomy, materia medica, psychiatry, and the teaching of deaf-mutes, some of these special interests being inspired by family tragedy. The gallery is one of which American medicine can be proud. There is the foreshadowing of a real medical school in Ezra Stiles' "Plan of a University" of 1777 and the realization of such a school under the guidance of President Timothy Dwight and his Faculty.

C. Lilian Temkin

J. D. J. HAVARD. *The Detection of Secret Homicide.* A Study of the Medico-legal System of Investigation of Sudden and Unexplained Deaths. London: Macmillan & Co. Ltd.; New York: St. Martin's Press, 1960. xv + 253 pp. $8.00.

This is the first volume in a new series of English and international studies presented under the editorship of L. Radzinowicz by the Cambridge Institute of Criminology. It is primarily a critical appraisal of medico-legal methods in England and Wales as they apply to the problem of ensuring that homicidal deaths are not disposed of as deaths from natural causes; but because the author has provided a substantial historical treatment of the subject, his book is also a history of the way English society has dealt with the problem of sudden or unexpected deaths. The investigation of such deaths in England is handled by the coroner's inquest, and an analysis of the way in which this institution has evolved since early Norman times forms a basis for the author's later criticisms of the modern English medico-legal system. Having called attention to the relative delay in the introduction of medical evidence into the investigation of sudden death by the English, he presents a most interesting and well-documented description of the medieval inquest, emphasizing the original wide and effective jurisdiction of the coroner. A legal procedure for investigating sudden death was well developed in twelfth-century England, its success and thoroughness depending, it appears, not on any implied intent to deter murderers but on the various fines and forfeitures which could be imposed for negligent behavior—such as failure to raise the hue and cry on discovery of the corpse or failure of required persons to attend the inquest—which therefore invested almost any dead body with the supreme importance appropriate to a source of state revenue. Thus all cases of sudden death fell within the jurisdiction of the medieval coroner, whether felonious violence was apparent or not. Later on, when these assets began to dwindle away and remuneration of coroners depended on unsympathetic justices of the peace, who were loath to pay for an inquest when felony was not obvious, the coroner's jurisdiction became more limited, a condition which led, as Dr. Havard feels, to serious defects in the ability of the modern English system to deal with covert homicide. Dr. Havard describes the progressive deterioration of the coroner's function, largely attributable to judicial interference, which was not arrested until 1836 when remedial legislation provided the first real improvement in medico-legal investigation. The coroner could thenceforth order an autopsy, and medical witnesses could be paid. In spite of the provision in the same year of a death registration act, partly the result of a demand by the medical profession for mortality statistics, judicial interference continued, and though concealment of homicide was made more challenging, the secret poisoner still enjoyed halcyon days.

The prevalence of covert homicide in the gruesome form of child murder is illustrated by an account of the "burial clubs" that flourished in the first half of the nineteenth century. These Friendly Societies, sometimes under the control of undertakers and barkeepers, offered insurance against funeral expenses, but, without the control of an effective system for reporting deaths to the coroner, provided a kind of sinking fund for infanticide. Sudden death among infants

seems to have been as much a matter of course as their staying alive, and if they did stay alive but were fretful they stood a fair chance of being drugged and subdued by one of several popular opiate mixtures such as "Quietness."

If the coroner finally was delivered from the justices of the peace by being placed on a salary, he still had to face the embarrassments of an unfavorable position relative to a medical profession having all the advantages of a refined science of pathological anatomy. How much more pleasant it must have been for the coroner to think things out for himself and come to his own conclusions, as the following delightful examples suggest: "Died from a stone in the kidney, which stone he swallowed in a state of intoxication"; "Child, 3 months old, found, but no evidence to show whether born alive."

Chapters dealing principally with the present English medico-legal system and Dr. Havard's suggested reforms lie outside the scope of this review. Reference tables of statutes and cases, a bibliography, and an index are provided. The book is highly recommended.

WILLIAM CATHEY

RUDOLF NISSEN and ROGER H. L. WILSON. *Pages in the History of Chest Surgery.* Springfield, Ill.: Charles C Thomas, 1960. vii + 166 pp. Ill. $7.50.

Surgery of the chest is the youngest subspecialty in the field of operative therapy and, currently, is the most rapidly growing. Innovations have succeeded one another at such an accelerated pace, particularly during the last twenty-five years, that their sequence is difficult to keep in mind, despite the brevity of the time that has elapsed. This review of the most dramatic advances is, therefore, timely and most welcome.

The barrier which hindered the development of thoracic surgery for many years after surgery of the abdomen and cranial cavity had entered upon its modern phase was the problem of pneumothorax. Normal respiration is dependent upon a lower pressure within the chest than in the surrounding atmosphere. If the chest is opened, atmospheric air rushes in and neutralizes the pressure differential, thus collapsing the lung. Curiously enough, as the authors of this book point out, the physiological knowledge of respiratory function long had been adequate for the resolution of this difficulty, but there was failure of its application to surgery. It was Ferdinand Sauerbruch who first found a method to operate within the thorax without the danger of death from pneumothorax. He achieved this by constructing a low-pressure chamber (1904), within which the chest could be opened with safety. The chamber gave way to a room-sized operating theater, and the path for the growth of thoracic surgery was opened. The subsequent introduction of positive pressure anesthesia later made the Sauerbruch chamber obsolete, and this is the method in use today.

The senior author of *Pages in the History of Chest Surgery* was an assistant to Sauerbruch and is, himself, a prominent thoracic surgeon with a number of significant contributions to his credit. Having made history in this field, he is eminently qualified to record it. The book grew out of a Mitchell Banks Memorial

Lecture which was delivered by Professor Nissen in 1953. An expanded version was published in German and now, with additional material, is made available in English.

This is a very attractive book. It is small, numbering one hundred-fifty pages, many of which are given over entirely to illustrations. Despite its brevity, it presents quite adequately and precisely the essentials of the limited phase of history it presumes to cover. In addition to the general chapters already referred to, it includes the development successively of pulmonary resection, surgery of pulmonary tuberculosis, of the heart, and of the esophagus. The contribution of other sciences to the development of thoracic surgery is generously acknowledged. The title, *Pages in the History of Chest Surgery*, is apt inasmuch as there are photographic reproductions of the initial pages of the key publications, as well as portraits of their authors. This work can be warmly endorsed as an interesting and readable contribution to the history of surgery.

LEO M. ZIMMERMAN

JAMES GRAY. *Education for Nursing.* A History of the University of Minnesota School. Minneapolis: University of Minnesota Press, 1960. 239 pp. Ill. $5.00.

The history of this school of nursing affords understanding of the growth of all nursing education, not only that found in universities. It provides insight into the creation of the profession of nursing in this country in the early years of the present century. It also records the support given to the school by two members of the medical profession, one a member of the medical board of the university and the other the superintendent of the university hospital. Because of this support, the leadership of dedicated nurse directors, and the cooperation of faculty and students, it was possible to establish an undergraduate nursing program in a university at a time when this was truly experimental.

The story begins with a brief résumé of some pertinent highlights of the evolution of modern nursing in England and America. The difficulties of a pioneer institution in planning and carrying through a course of study leading to a degree, while also conducting a hospital school of nursing, are related in lively fashion. As the school continued to function, the weaknesses of the original plan became apparent and gradually the program was strengthened, this being made possible through the continued support of all concerned. Eventually a sounder plan superseded the old one, and courses for graduate nurses were added.

An account is given of the worldwide leadership of the graduates, and the vital part played by them in local, state, and national health programs, as well as in nursing organizations. A clue that the past is but prologue to future building is found in the closing chapter. Photographs of early and later individuals and scenes enliven the text and add interest.

ANNE L. AUSTIN

THE BULLETIN RECENTLY RECEIVED *

Zachary Cope. *Sir John Tomes. A Pioneer of British Dentistry.* London: Dawsons of Pall Mall, 1961. ix + 108 pp. Ill. 25s.

David L. Cowen. *America's Pre-pharmacopoeial Literature.* Madison, Wisconsin: American Institute of the History of Pharmacy, 1961. 40 pp. Ill. $1.00.

Clifford Dobell. *Antony van Leeuwenhoek and His "Little Animals."* New York: Dover Publications, Inc., 1960. vii + 435 pp. Ill. $2.25.

René Dubos. *The Dreams of Reason.* Science and Utopias. New York and London: Columbia University Press, 1961. xii + 167 pp. Ill. $5.00.

David Edwardes. *Introduction to Anatomy, 1532.* A facsimile Reproduction with English Translation and an Introductory Essay on Anatomical Studies in Tudor England by C. D. O'Malley and K. F. Russell. Stanford: Stanford University Press, 1961. 64 pp. Ill. $2.75.

Henry Guerlac. *Lavoisier—The Crucial Year.* The Background and Origin of His First Experiments on Combustion in 1772. Ithaca, New York: Cornell University Press, 1961. xix + 240 pp. Ill. $4.50.

William Harvey. *Lectures on the Whole of Anatomy.* An Annotated Translation of *Prelectiones Anatomiae Universalis* by C. D. O'Malley, F. N. L. Poynter, K. F. Russell. Berkeley and Los Angeles: University of California Press, 1961. 239 pp. Ill. $8.00.

Antoni van Leeuwenhoek. *The Collected Letters.* Edited, illustrated and annotated by a Commission of Dutch Scientists. Volume VI. Amsterdam: Swets & Zeitlinger, Ltd., 1961. 425 pp. Ill. $24.00.

The Scottish Society of the History of Medicine. *Report of Proceedings,* Session 1960-61. 36 pp. Ill.

Henry Alan Skinner. *The Origin of Medical Terms.* Second ed. Baltimore: The Williams & Wilkins Company, 1961. x + 438 pp. Ill. $12.50.

Vivian de Sola Pinto (Editor). *Thomas Alcock and John Wilmot, Earl of Rochester. The Famous Pathologist or the Noble Mountebank.* [Nottingham University Miscellany No. 1] Nottingham: Sisson and Parker Ltd., 1961. 42 pp. Front. 5s.

W. Stanley Sykes. *Essays on the First Hundred Years of Anaesthesia.* Vol. II. Edinburgh: E. & S. Livingstone Ltd., 1961. viii + 187 pp. Ill. $7.00.

René Vallery-Radot. *The Life of Pasteur.* Translated from the French by Mrs. R. L. Devonshire. New York: Dover Publications, Inc., 1960. xxi + 484 pp. $2.00.

World Directory of Dental Schools. Geneva: World Health Organization, 1961. [New York: International Documents Service, Columbia University Press]. 228 pp. $5.00.

Leo M. Zimmerman and Ilza Veith. *Great Ideas in the History of Surgery.* Baltimore: The Williams & Wilkins Company, 1961. xii + 587 pp. Ill. $15.00.

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* The *Bulletin* reserves freedom of decision as to the publications to be listed in this section. Items received, other than those assigned for review, are ultimately incorporated into the collection of the Institute of the History of Medicine.

CONTRIBUTORS TO THIS NUMBER

ANNE L. AUSTIN, R. N., B. S., A. M., was formerly Professor of Nursing, Western Reserve University, Cleveland, Ohio. Her address is 639 Unruh Avenue, Philadelphia 11, Pa.

PETER E. BROWN, M. B., Ch. B., M. R. C. P., D. P. H., (Ed.), is Senior Lecturer in Preventive Medicine and Public Health, The University, Sheffield 10, England.

WILLIAM J. CATHEY, M. D., is Assistant Professor of Pathology, The Johns Hopkins University, School of Medicine, Baltimore 5, Md.

EDWIN CLARKE, M. D., M. R. C. P., is Assistant Professor of the History of Medicine, The Johns Hopkins University, School of Medicine, Baltimore 5, Md.

HYMIE GORDON, M. D., M. R. C. P., is Senior Lecturer in Comprehensive Medicine and Chairman of the Medical History Club at the University of Cape Town Medical School, Observatory, C. P., South Africa.

SAUL JARCHO, M. D., is Associate Physician at the Mt. Sinai Hospital of New York. His address is 35 East 85 Street, New York 28, N. Y.

GENEVIEVE MILLER, Ph. D., is Assistant Professor of Medical History, School of Medicine, Western Reserve University, Cleveland 6, Ohio, and Research Associate in Medical History of the Cleveland Medical Library, Cleveland 6, Ohio.

SAMUEL X. RADBILL, M. D., practices pediatrics in Philadelphia and is Lecturer in the History of Pediatrics, Graduate School of Medicine, University of Pennsylvania.

JERRY STANNARD, Ph. D., is Visiting Assistant Professor of Philosophy, Philosophy Department, University of California, Santa Barbara, Goleta, Calif.

ANNE TJOMSLAND, M. D., resides in Putnam Valley, N. Y.

HENRY R. VIETS, M. D., is Curator of the Boston Medical Library, 8 The Fenway, Boston 15, Mass.

A. EARL WALKER, M. D., is Professor of Neurological Surgery, The Johns Hopkins University, School of Medicine, Baltimore 5, Md.

LEO M. ZIMMERMAN, M. D., is Chairman of the Department of Surgery, Chicago Medical School. His address is 55 E. Washington Street, Chicago 2, Ill.

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